Smithsonian Astrophysical Observatory

TECHNOLOGY CONTROL PLAN

RELATED TO THE CONTROL OF ITAR OR EAR-CONTROLLED

HARDWARE, SOFTWARE AND TECHNOLOGY DEVELOPED

OR PROVIDED AS PART OF OUR RESEARCH AND SCIENCE PROGRAMS

DATE

March 3, 2022

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i Definitions

Alien: Any person who is not a citizen or national of the United States.

Bureau of Industry and Security (BIS): Organization within the Department of Commerce that manages export controls - works with Department of Defense and Department of State to ensure export compliance.

Controlled Unclassified Information (CUI): Information that is related to defense articles or services on the U.S. Munitions List, or dual-use strategic items on the Commerce Control List that require an export license to transfer to a non-U.S. person or entity where no license exemption or license exception applies.

Deemed Export — Transfer of controlled technology through any means (verbal, written, visual, electronic) to a foreign person in the United States, where a license is required to export the same technology to his or her home country.

Defense Article — Any item on the U.S. Munitions List (22 CFR, Part 121), and can include **non-military** items; (e.g., spacecraft, research satellites, certain ground control and infrared technologies) or items specially designed to improve an item's defense capabilities.

Directorate Defense Trade Controls (DDTC): Organization within Department of State that is responsible for managing ITAR.

Dual-Use — Items and technology that are primarily commercial in nature, but that the Government has deemed may have a "dual use" for a military or strategic purpose.

Empowered Official (EO): Officer of the company who is trained in the ITAR and signs license applications once the accuracy has been assured. The EO has the authority to legally bind the company and can halt export shipments without negative repercussions.
Export: For the purposes of the TCP, sending or taking export-controlled articles outside the United States--or the transfer or disclosure of export-controlled articles or technical data--to a non-U.S. person or entity by any means, whether in the U.S. or abroad.
Export Administration Regulations (EAR): U.S. Department of Commerce guidelines for control of exports.

Foreign person/Non-U.S. Person: Any person who is not a U.S. citizen, permanent resident alien (green card holder), or protected individual (refugee and asylum status) as defined in 8 USC 1324b. This includes foreign corporations or partnerships that are not incorporated in the U.S. In this TCP, this is also referred to as a "non-U.S. person".

Fundamental Research: Basic and applied research in science and engineering where the resulting information is free from restrictions on publication and involves information that is not subject to any access or dissemination controls whose intent is to be published and shared broadly in the scientific community (ITAR, 22 CFR, Section 120.11). The EAR has specific criteria about how the "sharing" must occur to qualify as "publicly available."

Fundamental research is exempt from export controls (although not necessarily outside the scope of U.S.-imposed trade sanctions). Note: If the research involves the development of or improvement to a tangible item, such as an instrument, and the instrument is on one of the export control lists, it will not qualify as fundamental research. Procedures exist to obtain permission in writing to release information into the public domain.

International Traffic in Arms Regulations (**ITAR**): Implementation of the President's authority to manage the export of defense articles.

National Security Program Operations Manual (**NISPOM)**: Required control plan for companies that are working on classified projects.

Permanent Resident Alien: Person with permanent resident status

Public Domain Exclusion **(ITAR, EAR)** — The export control laws contain exceptions from the licensing requirement for certain information that is in the "public domain," which means "information that is published and that is generally accessible or available to the public." Note that the EAR and the ITAR handle publications with different criteria. The EAR require that the information has been published and the Department of Commerce recognizes "publishing" as posting on the Internet for free. The ITAR require that the information has been published in more limited areas: ordinary publication through sales at newsstands and bookstores; subscriptions which are available, without restriction, at libraries open to the public; patent information available at any patent office; unlimited distribution at a conference, meeting, seminar, trade show, or exhibition generally accessible to the public, in the United States; or public release in any form after approval by the cognizant U.S. Government department or agency.

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 in previous section.

Smithsonian-Affiliated Persons (SAO-Affiliated Persons)— this category includes contractors embedded with SI employees, research associates, interns and Fellows, volunteers, and visiting researchers (including scientists, scholars and students).

Technical Assistance Agreement (TAA): Agreement provided by DDTC to allow specified foreign entities workers to allow access to specified ITAR information.

Technical Data: Any information related to the development, design, manufacture, servicing, or repair of a controlled item.

Technology Control Plan (TCP): Plan implemented by companies that design or develop ITAR-controlled technology--or that access the ITAR-controlled information of their clients--to safeguard against the unauthorized release of ITAR technology and information to Non-U.S. persons that follow the guidelines provided by the DDTC and the NISPOM recommendations for classified projects.

U.S. Munitions List: Part of the secondary regulations in the ITAR that defines which defense articles and services are subject to licensing. The list is contained in part 121 of ITAR (22 Code of Federal Regulations (CFR) Parts 120 – 130) and is divided into 24 categories.

U.S. Person: A person who is a United States citizen, lawful permanent resident alien, or who is a protected individual (refugee or asylum status).

ii References

Government Links

a. Bureau of Industry and Security web page

i. Exporting Basics – training video

ii. Export Administration Regulation (EAR) – downloadable files

iii. Commerce Control List

iv. Alphabetical Index to CCL

v. Countries under EAR export restrictions

vi. Multilateral Export Control Regimes

b. Directorate of Defense Trade Controls

i. International Traffic in Arms Regulations

ii. Glossary of Terms

iii. Proscribed Countries

iv. US Munitions List

v. Commodity Jurisdiction

vi. Order of Review

vii. Specially Designed Tool

1.0. Introduction

As a research institution, the Smithsonian Astrophysical Observatory (SAO) is required by federal law to safeguard and/or obtain approval for the transfer of hardware, software and technical data to non-U.S. persons for space and export-controlled projects that are outside of the "fundamental research" or "public domain" parameters.

The **Technology Control Plan** (TCP) and its implementation is our compliance system used to control the access to export-controlled data, software and technology to non-U.S. persons. SAO follows guidelines issued by several government agencies, including NASA, describing best practices for establishing adequate TCPs.

These guidelines require that "exporters" of export-controlled information have methods in place to prevent access to controlled technology by non-U.S. persons until authorization can be obtained. In addition to an actual shipment of a tangible article or transmission of data, an "export", defined in the following section, could also be a tour, meeting, training, webinar, email, download, traveling with a mobile device with export-controlled data or allowing access to a network when non-U.S. person are involved.

The TCP exerts controls in four areas:

1. **Physical access controls** related to monitoring of visitors and non-U.S. workers to research spaces and offices where export-controlled work is being performed or export-controlled instruments are located.

2. **Human Resource (HR) controls** to assess the U.S.-person status of job candidates, employees and contractors who may need access to CUI as part of their responsibilities and communicate this status to the Export Compliance Officer

3. **Information Technology controls** that are designed to limit access to export-controlled information and monitor networks and servers from intrusion.

4. **Procurement controls** to ensure that technical specifications and export-controlled drawings are properly marked and reviewed for license requirements before they are provided to vendors and contractors/subcontractors.

This document describes SAO's procedures and training in these areas.

The NASA Handbook and other references can be found on the SAO Export Compliance website .

1.1 Our Responsibilities

We are responsible for identifying projects that may have "foreign national" or export restrictions and analyzing which activities subject SAO to the controls of the

- **International Traffic In Arms Regulations** (ITAR) (22 CFR Parts 120 – 130) which are administered by the U.S. Dept. of State, Directorate of Defense Trade Controls (DDTC). These regulations control the export of space and infrared technologies; satellites, space vehicles, ground stations; and encryption for military use and guidance systems, among other specially designed defense items. We must interface with DDTC when obtaining approval for technology transfers.

- **Export Administration Regulations** (EAR) (15 CFR Parts 730 – 774) which regulate all other commercial items that are exported, including some items that may require a license from the U.S. Dept. of Commerce, Bureau of Industry and Security (BIS). Items that may need a license are lower-level IR cameras, some cryo-cooled optics and lasers, as well as items, software and technology which may not require an export license, but are subject to foreign policy, terrorist, and weapons of mass destruction export restrictions.

- **Foreign Assets Control Regulations** (FACR) There are many countries that are under United Nations (UN) sanctions or U.S. foreign policy sanctions. Even if a license is not required to transfer certain items, such as copyrighted material, SAO may not transfer export-controlled technology or any monetary assets to these countries or to officials of those countries that are listed on the Specially Designated Nationals List or from Cuba, Iran, North Korea, Sudan and Syria.

The SAO **Export Compliance Officer (ECO)** and the **Export Compliance Oversight Team** are persons delegated as responsible for the day-to-day export/import operations and compliance oversight related to Sponsored Programs, Information Technology (IT), Facilities, Engineering, Property Management, Procurement, Travel and HR.

The SAO **ECO** responds to inquiries, determines what type of export license is required, and applies for the appropriate license. The **ECO** identifies and reviews export-controlled projects/items/technical data handled by SAO; manages licenses and compliance with export license provisos, Non-Disclosure Agreement (NDAs) and record keeping requirements; and prepares all necessary Technical Assistance Agreements (TAAs) and related documents, as necessary.

These inquiries include:

- *Does my project/contract have export control restrictions?*

- *Do I need approval to hire or collaborate with a non-U.S. person?*

- *Are there concerns about presenting my research to an audience where foreign persons may be present?*
- *Can I provide design information to a foreign vendor?*
- *What am I responsible for when securing my lab space?*
- *Now that I have a license, what do I need to do?*
- *What records do I need to keep?*
- *What do I need to do to export an item or hand-carry my laptop or mobile device overseas?*

The persons who are involved with releasing technical data need to be informed that "export" is broadly applied in U.S. export regulations. The definition is below:

1.2 Export

Per the ITAR § 120.17, an *export* means

(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.

Per the EAR §734.13:

(a) Except as set forth in §§ 734.17 or 734.18, Export means:

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

(2) Releasing or otherwise transferring “technology” or source code (but not object code) to a foreign person in the United States (a “deemed export”);

(3) Transferring by a person in the United States of registration, control, or ownership of:

(i) A spacecraft subject to the EAR that is not eligible for export under License Exception Strategic Trade Authorization (740.20) STA (i.e., spacecraft that provide space-based logistics, assembly or servicing of any spacecraft) to a person in or a national of any other country; or

(ii) Any other spacecraft subject to the EAR to a person in or a national of a Country Group D:5 country.

(b) Any release in the United States of “technology” or source code to a foreign person is a deemed export to the foreign person's most recent country of citizenship or permanent residency.

(c) The export of an item that will transit through a country or countries to a destination identified in the EAR is deemed to be an export to that destination.

§ 734.17 relates to the export of encryption source code and 734.18 relates to what is **not an export:**

(1) Launching a spacecraft, launch vehicle, payload, or other item into space.

(2) Transmitting or otherwise transferring “technology” or “software” to a person in the United States who is not a foreign person from another person in the United States.

(3) Transmitting or otherwise making a transfer (in-country) within the same foreign country of “technology” or “software” between or among only persons who are not “foreign persons,” so long as the transmission or transfer does not result in a release to a foreign person or to a person prohibited from receiving the “technology” or “software.”

(4) Shipping, moving, or transferring items between or among the United States, the District of Columbia, the Commonwealth of Puerto Rico, or the Commonwealth of the Northern Mariana Islands or any territory, dependency, or possession of the United States as listed in Schedule C, Classification Codes and Descriptions for U.S. Export Statistics, issued by the Bureau of the Census.

(5) Sending, taking, or storing “technology” or “software” that is:

(i) Unclassified;

(ii) Secured using 'end-to-end encryption;'

(iii) Secured using cryptographic modules (hardware or "software") compliant with Federal Information Processing Standards Publication 140-2 (FIPS 140-2) or its successors, supplemented by "software" implementation, cryptographic key management and other procedures and controls that are in accordance with guidance provided in current U.S. National Institute for Standards and Technology publications, or other equally or more effective cryptographic means; and

(iv) Not intentionally stored in a country listed in Country Group D:5 (see Supplement No. 1 to part 740 of the EAR) or in the Russian Federation.

1.3 Scope

This TCP applies to SAO staff and all SAO-affiliated persons working on SAO projects.

1.4 SAO Facilities

In Massachusetts

Each SAO facility listed below has its own written export-control visitor policy:

Chandra Operations Control Center, located at 15 Wayside Road, Burlington.

Cambridge Discovery Park, 100 Acorn Park Drive, Cambridge, is a secured building

160 Concord Ave, Cambridge, is secured in laboratory/computer room and after hours.

60 Garden Street, Cambridge, is a Harvard University property leased by SAO, under Harvard security policy. Open building with laboratory/computer room security. Individual Technology Controls Plans are implemented, as applicable.

SAO Observing Facilities in Other Locations

SAO has multiple observing facilities in Arizona, Hawaii and Greenland where the ECO works with each Facility Manager to determine if there is export-controlled equipment and data. Based on the regulatory requirement, the ECO and Facility Managers determine the necessary facility controls. Access to export-controlled equipment is to be limited to U.S. persons or non-U.S. persons who have been cleared against the denial lists and are eligible for a license exception, license exemption, or export license.

1. **Fred Lawrence Whipple Observatory (FLWO)** Arizona – Located 42 miles south of Tucson, Arizona; has a security plan.

2. **Multiple Mirror Telescope (MMT) Observatory (MMTO)** – The major observing facility on Mt. Hopkins is a 6.5 m optical telescope which is operated jointly by SAO and the University of Arizona.

The major SAO instruments at the MMTO are:

- The f/5 Wavefront Sensor and Science Camera (MMTCam), a small field optical imager.
- The Hectospec, a moderate dispersion 300 fiber optical spectrograph.
- The Hectochelle, a fiber fed multi-object echelle spectrograph.
- The Binospec, a multi-slit optical spectrograph.
- The SAO Widefield InfraRed Camera (SWIRC), a near-IR (YJH band) imager.

3. **The Submillimeter Array (SMA)** Hawaii – Located at the summit of Mauna Kea in Hawaii. The array consists of eight 6-m movable antennas that can be positioned in different locations to provide an angular resolution equivalent to an antenna of 0.5 km (0.3 miles) across. This imaging interferometric telescope operates in the major atmospheric windows from 0.3mm to 1.3mm. The SMA is a collaborative project between the SAO and the Academia Sinica Institute of Astronomy and Astrophysics (ASIAA) Taiwan.

   In addition to the summit facility, the SMA has a base facility located in Hilo, Hawaii, which is used for research, administration, and other operational requirements in support of the SMA.

4. The **Greenland Telescope Project**, Greenland - a collaborative project between the SAO and ASIAA at Thule Air Force Base. The goal is to jointly develop and deploy the Atacama Large Millimeter/submillimeter Array (ALMA) Prototype Antenna to a National Science Foundation site on the Greenland ice sheet where it will be utilized to conduct submillimeter wavelength Very Long Baseline Interferometry (VLBI) and Terahertz (THz) single dish studies.

Other Observing Facilities with SAO Instrumentation

SAO has instrumentation at the following observing facilities operated by other institutions:

1. **Magellan Telescopes** at the Las Campanas Observatory on Cerro Las Campanas in Chile, has a security plan when export-controlled detectors are on-site. The site operates twin 6.5-m optical telescopes for a consortium of institutions, which includes Harvard University, the Carnegie Observatories, MIT, the University of Michigan, and the University of Arizona.

   SAO's MMIRS (MMT and Magellan Infrared Spectrograph) and Megacam instruments are located here. The Megacam is a 36 charge-coupled device (CCD) mosaic camera and the MMIRS is a multi-slit IR spectrograph. The MMIRS has an ITAR-controlled detector, which is encased in a 4000-pound

instrument and can only be removed with a crane; the Magellan Security Plan signed by the Observatory Director who only permits U.S. persons to remove the instrument and detector.

Also located at Magellan is SAO's Parallel Imager for Southern Cosmology Observations (PISCO).

2. The **South Pole Telescope (SPT)**, a 10-meter-diameter telescope located at the National Science Foundation's South Pole research station. Designed to conduct large-area millimeter- and submillimeter-wave surveys of faint, low-contrast emission, this telescope is a collaboration among the University of Chicago, University of California (Berkeley), Case Western Reserve University, University of Illinois, and SAO.

3. The **Gran Telescopio Canarias** located at the Roque de los Muchachos Observatory on the island of La Palma, in the Canary Islands in Spain. SAO has loaned this facility the Green Astrocomb instrument.

4. Working with the University of Massachusetts and Haystack of MIT, SAO has major equipment at the Large Millimeter Telescope (LMT) in Puebla, Mexico. This facility is under the control of National Institute of Astrophysics, Optics and Electronics (INOAE) Mexico.

2.0 Export Compliance Oversight Team

The SAO **Export Compliance Officer (ECO)** and members of the **Export Compliance Oversight Team** are SAO staff who have been delegated responsibility for the day-to-day export/import operations and compliance oversight.

The **Export Compliance Oversight Team** is responsible for enhancing existing SAO procedures related to contracting, human resources, exporting, importing, foreign travel, facilities, IT provisioning and procurement of controlled items and activities to meet export compliance best practices. All members have a role in SAO's monitoring of deemed export activities: provisioning access to SAO networks, permitting access to facilities and laboratory space and informing the **ECO** when an activity related to export compliance requires attention. Employees may need to adopt new procedures to implement the requirements of this manual.

All export/import compliance questions should be addressed to:

Name	**Contact Info**
Natascha Finnerty Export Compliance Officer	nfinnerty@cfa.harvard.edu 617 496-7557 Cell: 508 331-4530
SAO members of the Export Compliance Oversight Team (in alphabetical order):	**Contact Info**
Thomas Bonnenfant Supervisor, Sponsored Program Section, Sponsored Programs and Procurement Department **Role:** Back-Up to Export Compliance Officer	tbonnenfant@cfa.harvard.edu 617 495-7317
Laura Conway Director of Human Resources **Role:** Relates U.S. person status of individuals when hired or assigned badges. Advertises positions with export control restrictions, when applicable. Coordinates visas with ECO when an export license is determined to be required.	lconway@cfa.harvard.edu 617 495-7373

Christine Crowley Administrator for SAO Fellowship Programs **Role:** Provides ECO with regular reports of Fellows invited to SAO and identifies their advisor	ccrowley@cfa.harvard.edu 617 495-7103
Division Administrators and Division Managers (DA/DM) **Role:** Inform ECO of programs and non-U.S. persons who are visiting, traveling, etc. Also inform ECO if hiring contractors who are non-U.S. persons.	DA/DM distribution list
William Duggan Facilities Manager – Cambridge Discovery Park (CDP), 100 Acorn Park Drive, Cambridge, MA **Role:** Monitors facility access of non-U.S. persons	wduggan@cfa.harvard.edu 617 496-5729
Chris Eagan Chandra Operations Control Center (OCC), One Hampshire Street, Cambridge, MA will be relocating to Wayside, Burlington, MA. (May 2019) **Role:** Monitors facility access of non-U.S. persons at OCC, acts as Technology Officer.	ceagan@ipa.cfa.harvard.edu 617 496-7306
Muriel Hodges Division Administrator and Facilities Manager – 160 Concord Avenue, Cambridge, MA **Role**: Monitors facility access of non-U.S. persons	mhodges@cfa.harvard.edu 617 496-7617
Ethel (EJ) Dotts Manager, Procurement Department **Role**: Coordinate identification of contracts with export compliance issues and of export-controlled equipment and export of design drawings/data to foreign vendors	edotts@cfa.harvard.edu 617 496-7562

Michael McCarthy Acting Deputy Director **Role**: Technology Manager for 60 Garden Street	mmcarthy@cfa.harvard.edu (617) 495-7262
Robert Hewett Manager of the Computations Facility (CF) **Role**: Responsible for issues related to provisioning of certain SAO networks and badges	rhewett@cfa.harvard.edu 617 496-7508
Michael McIsaac Accountable Property Officer **Role**: Responsible for the tracking of tagged property and their related import and export clearance functions	mmcissac@cfa.harvard.edu 617 495-7318
Kari Haworth Director of Central Engineering **Role**: Responsible for the appropriate provisioning of networks to authorized non-US persons of engineering tools and files managed by CE and manage CDP lab space to authorized persons	kari.haworth@cfa.harvard.edu 617-495-7267
Simon Radford Supervisory General Engineer, The Submillimeter Array (SMA) Telescope, Hawaii **Role**: Responsible for the appropriate access to instruments for repair and provisioning of networks to only authorized non-US persons of engineering tools and files managed by FLWO Configuring works spaces per the Technology	sradford@cfa.harvard.edu 808-961-2924 tcooper@cfa.harvard.edu 808 961-f 2969.

Control Plan. Mac Cooper (Computers). Role: Responsible for the appropriate provisioning of networks to only authorized non-US persons of export controlled engineering tools and files managed by FLWO Facilities Manager - The Submillimeter Array (SMA) Telescope, Hawaii **Role**: Monitors facility access and interfaces with the **ECO**.	
Pascal Fortin Supervisory Physical Scientist Fred Lawrence Whipple Observatory FLWO **Role:** Monitors facility/file access and interfaces with the **ECO**.	pfortin@cfa.harvard.edu 520 879-4570

3.0 CONTROLS UNDER THE TCP

3.1 Identification of ITAR- or EAR-controlled Programs

Responsible Positions

- Contracts and Grants (Sponsored Programs Section) Supervisor
- Export Compliance Officer
- Manager of Sponsored Programs and Procurement Department

Records Maintained

- Notice of public release from Department of Defense (DOD)
- Contracts that contain export compliance clauses
- Proposals with export-controlled advisories
- List of contracts and grants that are export controlled
- Commodity Jurisdiction and classification documents
- Notices by collaborators about technology that are export controlled

Purpose

This section explains the methodology at SAO to identify export-controlled data and programs. Once research data and programs are identified as export-controlled, the procedure below explains how SAO obtains export authorization from the appropriate government agency--from the U.S. Department of State, or the U.S. Department of Commerce--prior to providing access to controlled technical data to foreign persons, whether they are in the U.S. or in a foreign country.

Procedure

1. Identifying Export-Controlled Data/Projects

SAO identifies possible export-controlled data/projects in several ways:

- Noting export license clauses in proposals.
- Noting export control and data restrictions in awards or technical information with export control markings.
- Identifying any disclosure restrictions or requirements to sign a Non-Disclosure Agreement.
- Interviewing Principal Investigators (PIs) and engineers whose work is likely to involve technology on the Commerce Control List or U.S. Munitions List and verifying the technical aspects of the actual work. Confirming what activities are exempt from export controls as qualifying as “fundamental research,” such as observing data.

- Interviewing engineers who support the research and instruments.

- Classifying federal research topics involving space or export-controlled instruments, items and technologies.

- Identifying possible research and development projects at SAO involving known space or export-controlled instruments, items and technologies.

- Reviewing travel requests for NASA and conferences.

Based on the projects that have been identified as above, the **ECO** with **qualified technical assistance** at SAO identifies if the technology is subject to the U.S. Munitions List or the Commerce Control List. This is documented on the Product Classification form. If there is doubt or a decision to have the conclusion confirmed by one of the regulating agencies, the ECO prepares a commodity jurisdiction application to the DDTC or a classification request to BIS.

2. Classifying Controlled Unclassified Information (CUI) and Data

As part of our TCP, SAO must define its projects, databases and research into categories:

*Items bulleted with a **lemniscate** (∞) are exempt from controls; items bulleted with a **delta** (Δ) may be issued a license assigned by the ECO; items bulleted with an **omega** (Ω) need to obtain a license from a government agency and that requires 1 – 3 months.*

DETERMINATION	**LICENSE REQUIRMENT**
∞ Public domain (Refer to definition in section 1)	Not subject to ITAR or EAR
∞Fundamental research (Refer to definition in section 1)	Not subject to ITAR or EAR
Δ EAR-controlled: subject to a broad exception to the EAR per Section 740	License exception Technology and Software Unrestricted - TSU for operating information, and bug fixes where there is no enhancement License Exception Encryption (ENC) can be authorized for commercial encryption software that has been classified by BIS and/or contains standard encryption
Δ EAR-controlled: subject to a country- limited License Exception TSR Letter of Assurance, 740.6 of the EAR	**License Exception** **Technology and Software Restricted – "TSR"** for eligible EAR-controlled technology. Available for

Strategic Trade Area – STA, 740.20	persons from countries listed in Part 740, Suppl. 1, "Group B" of the EAR Strategic Trade Area requires notification of the recipient of the controlled status of the Technology and its ECCN, and confirmation that it will not be re-exported or released to persons form countries that are not eligible. (Eligible nationalities are those from Canada, Europe, Japan, Australia, New Zealand, and Argentina. Not eligible for foreign persons from D:5 countries (or recently Hong Kong.)
Δ ITAR controlled – subject to an exemption	There are limited exemptions: for Canada, for multi country space projects, for Full Time Employee who is a non-US person at a U.S. institute of higher learning, from an eligible country, and exports to institutes of higher learning to NATO countries of Space (Cat XV) items.
ΩITAR controlled or EAR controlled – subject to a license	For one-time disclosure, such as sending a drawing or information in a proposal – we can apply for a Permanent export license. If it is an ongoing interaction, then a Technical Assistance Agreement will be required.

Based on the type of technology, the ECO determines the appropriate technology access restrictions: network access, offices and lab spaces. The program or technology is classified on the "Possible Export Controlled Projects" list. The ECO works with the PI or Program Manager to classify as "not subject to export controls" because it is in the public domain or fundamental research:

- permissible under an exemption or exception
- qualifies as "NLR"- no license is required
- eligible for a BIS technology license exception using "TSR" or "STA" -- a self-managed system – whereby the non-U.S. person signs a Letter of Assurance, (which is prepared by the ECO and signed by the non-U.S. person)
- requires an export license under the ITAR or EAR

3. Securing "Controlled Unclassified Information" (CUI) and Data

Prior to providing access to CUI to non-U.S. persons, whether they are in the U.S. or in a foreign country, U.S. regulations require that all parties, including research centers, obtain export authorization from the appropriate government agency that has cognizance or authority over the information.

The appropriate agency could be the U.S. Department of State, Directorate of Defense Trade Controls (DDTC) for ITAR-controlled CUI or the U.S. Department of Commerce, Bureau of Industry and Security (BIS) for EAR-controlled CUI. Currently, space-related research is controlled by both the ITAR and EAR.

Refer to 1.2 to understand that "exporting" is not limited to transferring a document or piece of equipment to a foreign national. An export occurs when there is any transfer to any non-U.S. person, either within or outside of the U.S., of controlled commodities, technology, or software, by physical, electronic, oral, or visual means, with the knowledge or intent that the items will be shipped, transferred, or transmitted outside of the U.S.

Examples include:

- Any transfer to a foreign embassy or affiliate
- Direct exports: Space Act agreements, Cooperative Research, Development Agreements, contracts; donations, sales, or transfers of surplus equipment
- International and domestic collaborations and technical exchange programs
- Publications, such as technical briefs and reports
- Written materials in general, from memos and letters to trip reports and work notes
- Presentations at domestic and foreign conferences
- Visits and assignments by foreign nationals to SAO, including lab tours
- Foreign travel by SAO or SAO-contractor employees
- Conversations with foreign nationals anywhere
- Specifications included in proposals or requests for quotations
- Other types of communication such as telephone calls, faxes, e-mails, reports, plant/lab visits both in the U.S. and abroad, mailings, or the placement of SAO material on the internet.

4. Review of contracts for export compliance clauses

PIs and the **employees of the Sponsored Programs and Procurement** (SPP)Department review pre awards and approved contracts to identify restrictive export clauses. These include the following examples:

Identifier	Clause
Subcontract Article 11.	(a) Seller represents and warrants that no technical data furnished to it by Buyer or developed by Seller directly from such data during performance of the work under this order will be disclosed to any foreign national, firm, or country, including foreign nationals employed by 0)" associated with the United States, without first complying with the licensing. approval, and all other requirements of the U.S. export control laws, regulations, and directives, Including but not limited to the Arms Export Control Act (22 USC 2778), International Traffic In Arms Regulation (22 CFR, Part 120-130), Export Administration Act (50 USC 2401-2410 as amended), Export Administration Regulations (15CFR part 730-799). DoD Directive 5230.25 Withholding of Unclassified Technical Data from Public Disclosure. (b) Seller will obtain the written consent of Buyer prior to submitting any request for authority to export any such technical data. (c) Seller will indemnify and hold harmless Buyer for all claims, demands, damages, costs, fines, penalties. attorneys' fees, and all other expenses arising from failure of Seller to comply with Ills
ARTICLE-12. COMPLIANCE WITH INTERNATIONAL TRAFFIC IN ARMS REGULATIONS. (ITAR)	A. Contractor agrees to comply with all applicable U.S. export control laws and regulations, specifically including the requirements of the International Traffic in Arms Regulation (ITAR), 22 CFR 120 et seq. B. Contractor agrees that except as allowed under applicable U.S. laws and regulations, no export-controlled item, data or services furnished to it hereunder will be disclosed to any foreign person, firm or country including foreign persons employed by or associated with or under contract with Contractor. C. Contractor shall first notify and obtain the written consent of APL prior to submitting any request for authority to export any technical data or services furnished to it hereunder. D. If export controlled equipment, data or services are furnished to Contractor hereunder, Contractor agrees to maintain an export compliance plan and take measures to ensure that no technical data is disclosed and no defense services or equipment are furnished to foreign persons except as authorized Sponsored Programs personnel then reviews the program with the PI to determine if there are anticipated collaboration with foreign persons, or use n our labs, purchase, or export of controlled hardware to foreign locations.
Contract Article 21 – Export	The disclosing party agrees to share any export control determinations

Control	when products, services, and/or technical data under this Agreement are subject to export controls under U.S. Government export laws and regulations; however, each party will be solely responsible for compliance with U.S. Government export laws and regulations.
Contract Article 34: Export Compliance:	The Sub recipient shall comply with all laws, regulations, orders, or other restrictions of the U.S. export regulations. Sub recipient agrees that it will provide the export control classification associated with the commodity being purchased, to the extent that this item is controlled either under the Export Administration Regulations (EAR) or the International Traffic in Arms Regulations (ITAR). For EAR-controlled items, the correct ECCN classification based on the Commerce Control List will be provided. For ITAR items, the correct USML Category will be provided.
Title 48: Federal Acquisition Regulations System PART 1852—SOLICITATION PROVISIONS AND CONTRACT CLAUSES Subpart 1852.2—Texts of Provisions and Clause 1852.225-70 Export Licenses. As prescribed in 1825.1103–70(b), insert the following clause: Export Licenses (FEB 2000)	(a) The Contractor shall comply with all U.S. export control laws and regulations, including the International Traffic in Arms Regulations (ITAR), 22 CFR Parts 120–130, and the Export Administration Regulations (EAR), 15 CFR Parts 730–799, in the performance of this contract. In the absence of available license exemptions/exceptions, the Contractor shall be responsible for obtaining the appropriate licenses or other approvals, if required, for exports of hardware, technical data, and software, or for the provision of technical assistance. (b) The Contractor shall be responsible for obtaining export licenses, if required, before utilizing foreign persons in the performance of this contract, including instances where the work is to be performed on-site at [insert name of NASA installation], where the non-U.S. will have access to export-controlled technical data or software.
NSF AA, CP-VI, G,3cc.	Financial & Administrative Terms and Conditions (CA-FATC) The grantee also should assure that activities carried on outside the U.S. are coordinated as necessary with appropriate U.S. and foreign government authorities and that necessary licenses, permits or approvals are obtained prior to undertaking the proposed activities.
NSF Grants Policy Manual, Chapter VII - Other Grant Requirements Article, 763 Projects in a Foreign Country Item 3. Projects in a Foreign Country	a. For awards that include activities requiring permits from appropriate Federal, state, or local government authorities, the grantee should obtain any required permits prior to undertaking the proposed activities. b. The grantee must comply with the laws and regulations of any foreign country in which research is to be conducted. Areas of potential concern include: (1) requirements for advance approval to conduct research or surveys; (2) special arrangements for the participation of foreign scientists and engineers; and (3) special visas for persons engaged in research or studies. NSF does not assume responsibility for grantee compliance with the laws and regulations of the country in which the work is to be conducted.

	NSF PROPOSAL AWARD POLICIES & PROCEDURES GUIDE (PAPP) - AAG - Chapter IV, Other Post Award Requirements and Considerations G. 3a. For awards that include activities requiring permits from appropriate Federal, state, or local government authorities, the grantee should obtain any required permits prior to undertaking the proposed activities. b. The grantee must comply with the laws and regulations of any foreign country in which research is to be conducted. Areas of potential concern include: (1) requirements for advance approval to conduct research or surveys; (2) special arrangements for the participation of foreign scientists and engineers; and (3) special visas for persons engaged in research or studies. NSF does not assume responsibility for grantee compliance with the laws and regulations of the country in which the work is to be conducted. c. The grantee also should assure that activities carried on outside the U.S. are coordinated as necessary with appropriate U.S. and foreign government authorities and that necessary licenses, permits or approvals are obtained prior to undertaking the proposed activities.
20.28 Government Permits and Activities Abroad (CA-FATC 43)	a. For awards that include activities requiring permits from appropriate Federal, state, or local 20.28 Government Permits and Activities Abroad (CA-FATC 43) Agreement #VAO_2010_3_(1) Page 30 of 46 a. For awards that include activities requiring permits from appropriate Federal, state, or local government authorities, the awardee should obtain any required permits prior to undertaking the proposed activities. b. The awardee must comply with the laws and regulations of any foreign country in which research is to be conducted. Areas of potential concern include: (1) requirements for advance approval to conduct research or surveys; (2) special arrangements for the participation of foreign scientists and engineers; and (3) special visas for persons engaged in research or studies. NSF does not assume responsibility for awardee compliance with the laws and regulations of the country in which the work is to be conducted. c. The awardee also should assure that activities carried on outside the U.S. are coordinated as necessary with appropriate U.S. and foreign government authorities and that necessary licenses, permits or approvals are obtained prior to undertaking the proposed activities.

5. Project-related TCP and NDAs

Each PI whose program has export compliance clauses or involves instrumentation is required to evaluate the existence of **"**controlled unclassified information" (CUI) or technology that will need to be safeguarded. If the program is export-controlled, the **ECO** will work with the **PI** and **PM** to create a **Project TCP** that identifies

- the **PI**, **PM**, and the scope of project
- whether it is ITAR- or EAR-controlled
- how the lab space is secured (two factor)
- where the data resides and how it is secured
- that related persons have attended export compliance training
- where and how records are maintained

If a non-U.S. person is working on the project, the PI must contact the ECO, who will have the person sign the appropriate ITAR or EAR NDA and file it with the license documents for the project on the V: 7 Export Compliance.

See form SAO-EC2. Sample NDA for ITAR and EAR are at the end of this section.

NOTE: A program can be ITAR- or EAR-controlled and not need an export license if there is no foreign involvement. But all programs with controlled information needs to be secured by a Technology Control Plan.

6. ITAR Exemptions Related to Non-U.S. Persons

The ITAR permits specific exemptions for institutes of higher learning related to technical data exchanges. These are available for full-time employees residing in the U.S. of countries that are not nationals of a proscribed country listed in section 126.1 of the ITAR and for multinational projects when the sponsor is NASA, DOD or Dept. of Energy.

If controlled unclassified information needs a license to be released to a foreign collaborator, **PIs** and **PMs** must contact the **ECO** in advance (8-12 weeks) to explain what technology needs to be transferred and assist in determining the classification.

Based on the technical parameters, the **ECO** assigns the appropriate export license authorization that is needed.

Other criteria for classifying possible **CUI:**

- If the program sponsor informs SAO that the technical data is controlled.

- If the sponsor informs us that the technical data is classified as not being controlled (and the determination is deemed reasonable and the source is qualified in export regulations.)

Absent a formal determination, which is accomplished by either a submission to DDTC for a commodity jurisdiction or to BIS for a classification, the **ECO** first assesses if the technical data can be transferred by qualifying as "public domain information" or by an ITAR exemption. The **ECO** inquires the author or source, as follows:

Can the information be declared as "able to be released to the public domain"? In order to do so, it must meet these criteria (§120.11 of the ITAR):

- Does the technical data relate basic academic principles?
- Is it available to the public in libraries for from which the public can obtain documents, newsstands or bookstores?
- Through patents available in any patent office?
- Published in open conferences, meeting seminar, tradeshow or exhibition general available to the public?
- Is it published in items sent in second class mailing privileges by US Government?
- Is the technical data published by the author or provided freely by the creator?
- Is it public specifications found in marketing literature?
- It is available on the internet where the reader can ascertain that the information has been properly released?

Each group that regularly releases information into the public will have guidelines about how make an assessment about when the information is in the public domain information or when they need to clear it through the Department of Defense Office of Prepublication and Security Review (DOPSR.)

Countries **not eligible** for participation in ITAR-controlled projects and EAR Space and munitions projects.

ITAR - Afghanistan, Belarus, Burma, Cambodia, Central African Republic, China (PRC), Cuba, Cyprus, Democratic Republic of the Congo, Ethiopia, Eritrea, Haiti, *, Hong Kong, Iran, Iraq, Lebanon, Libya, North Korea, Russia, Somalia, South Sudan, Sudan, Syria, *Ukraine*, Venezuela and Zimbabwe. (*Green are new countries)

Countries **not eligible** for EAR License Exceptions under STA and TSR (Hong Long was eliminated as an eligible county.

Country Group D

Country	[D:5] U.S. Arms Embargoed Countries[1]
Afghanistan	X
Armenia	
Azerbaijan	
Bahrain	
Belarus	X
Burma	X
Cambodia	
Central African Republic	X
China (PRC)	X
Congo, Democratic Republic of	X
Cuba	X
Cyprus	X
Egypt	
Eritrea	X
Georgia	
Haiti	X
Iran	X
Iraq	X
Israel	
Jordan	
Kazakhstan	
Korea, North	X
Kuwait	
Kyrgyzstan	
Laos	
Lebanon	X
Libya	X
Macau	

Country	[D: 1] National Security		[D:5] U.S. Arms Embargoed Countries[1]
Moldova	X		
Mongolia	X		
Oman			
Pakistan			
Qatar			
Russia	X		
Saudi Arabia			
Somalia			X
South Sudan, Republic of			X
Sudan			X
Syria			X
Taiwan			
Tajikistan	X		
Turkmenistan	X		
United Arab Emirates			
Uzbekistan	X		
Venezuela	X		X
Vietnam	X		
Yemen	X		
Zimbabwe			X

[1] Note to Country Group D:5: Countries subject to U.S. arms embargoes are identified by the State Department through notices published in the *Federal Register*. The list of arms embargoed destinations in this table is drawn from 22 CFR §126.1 and State Department *Federal Register* notices related to arms embargoes (compiled at http://www.pmddtc.state.gov/embargoed_countries/index.html) and will be amended when the State Department publishes subsequent notices. If there are any discrepancies between the list of countries in this table and the countries identified by the State Department as subject to a U.S. arms embargo (in the *Federal Register*), the State Department's list of countries subject to U.S. arms embargoes shall be controlling.

7. Submitting a paper to the DOD Office of Prepublication Security Review (DOPSR).
The following procedures apply to all information required to be submitted for clearance:

1. Requests to Be Submitted to DOPSR
   a. Paper submissions of packages. A minimum of three hard copies of material, in its final form, shall be submitted, together with a signed DD Form 1910, "Clearance Request for Public Release of Department of Defense Information," to the Chief, Office of Security Review, 1155 Defense Pentagon, Washington, DC 20301-1155.
   b. Electronic submissions of packages. One soft copy of the material, in its final form (Microsoft Word), shall be submitted, together with a signed DD Form 1910, by e-mail to secrev1@whs.mil.

2. Material submitted for review shall be approved by the Head of the DoD, Branch of the Military, cognizant agency or an authorized representative, as may be delegated in writing, to indicate approval of the material proposed for public release.

3. All information submitted for review to DOPSR must first be coordinated within the originating DoD Component to ensure that it reflects the organization's policy position; does not contain classified, controlled unclassified, or critical information requiring withholding; and is reviewed for operations security in accordance with References (h) and (i).

4. Only the full and final text of material proposed for release shall be submitted for review. Notes, outlines, briefing charts, etc., may not be submitted as a substitute for a complete text. DOPSR reserves the right to return draft or incomplete documents without action."

3.2 Policy for Controls over Visitors, Non-U.S. person Employees, Smithsonian Affiliated Persons and Contractors

Responsible Positions

- Export Compliance Officer (ECO)
- Principal Investigators (PI)
- Director of Human Resources
- Project Managers (PM)
- Division Administrators (DA)
- Facilities Managers
- Security Personnel

Records Maintained

- Position Description
- I-9 and Visa information
- I-129 forms
- Visitor log
- Information in staff database (SDF)
- Meeting description forms
- Floor plan of each facility with public areas noted
- Project-related TCP forms
- Export Control NDAs
- Export licenses for non-U.S. persons
- Exhibit 3.2.1 Personnel status at SAO

Purpose

The TCP requires the Smithsonian to have adequate access controls over the physical workspace for activities involved in export-controlled research (ITAR or EAR) or with export-controlled items. The program and procedures need to offer controls that permits access only to authorized persons, who are either U.S. persons or foreign nationals for whom the ECO has obtained an export license or other export compliance authorization.

Access controls are described in Smithsonian building security policies as communicated by Smithsonian Directives, Handbook, and Standards referenced at the end of this section. These deploy a combination of security staff, facility managers, electronic access control equipment, surveillance cameras, signage, keys, and locks to control access to buildings and laboratory space (both leased and owned).

The majority of SAO's offices and laboratory space are housed in four buildings in Cambridge and Burlington, Massachusetts. In addition, SAO also has observatories in Arizona and Hawaii, some of which are shared with other organizations.

Where activities and research have export-control issues, these **supplemental** facility controls are required to ensure SAO persons follow regulatory and export control best practice guidance published by US government agencies (the U.S. Department of State, Directorate of Defense Trade Controls and the U.S. Department of Commerce, Bureau of Industry and Security).

The overarching access control policy is described in this Section 3.2, and the detailed access control policies and procedures are detailed in the each of the separate documents related to each facility.

Procedures

1. Hiring and Badging Considerations

Persons are engaged at SAO premises through a variety of arrangements: employee (trust or federal), student/postdoctoral fellow, contractor, unpaid, or working with an SAO researcher but engaged in other independent activities (See Exhibit 3.2.1 Personnel status at SAO). All persons receiving an SAO badge are subject to a background check from the Office of Protective Services, which includes a "Denied Party screening" check of prohibited parties as identified by government agencies due to export controls regulations related to specific foreign nationals and foreign companies.

The **HR** specialists are informed by the hiring manager if a position involves a risk of exposure to export-controlled research. In such cases, candidates must be deemed to be eligible. When initiating a new hire activity (or position description) other than federal positions (which require a status of U.S. person) for a technical/scientific position, **Hiring Managers** inform the **Human Resources** (HR) [specialist on the job analysis documentation] **if a position involves export-controlled activities**. In such cases, the **HR** specialist includes an export compliance restriction notice on the job description, stating that the candidate must be able to be approved on an export license. This occurs when the responsibilities include, for example, the design or assembly of export-controlled instrumentation, spacecraft research, and/or software/database functions for an export-controlled project, or when work is being performed in a foreign country with potential license requirements.

If there are export-controlled duties, the **HR** specialist will consider only U.S. persons or nationals and visa types who are eligible for obtaining an export license. Therefore, prospects from a "prohibited country" will not be considered for an interview. Restricted countries are enumerated in the ITAR – (refer to the prohibited countries listed in section 126.1 of the International Traffic in Arms Regulations and EAR – the countries listed on D:1 and D:5 of Part 740, Supplement No. 1.).

For all positions, the **HR** specialist advises the **ECO** of candidates who are nationals of a country subject to comprehensive trade sanctions (currently Cuba, Iran, North Korea, Russia, Syria and Venezuela, and China and Hong Kong) as posted on Office of Foreign Assets Controls (OFAC's) website or BIS webpage for Country Guidance.

If an offer is planned to an eligible non-US person candidate for a restricted position, the **HR** specialist informs the **ECO** before the offer is tendered. The **ECO** is informed when non-U.S. persons are being sponsored under an H1B visa.

For H1B visas, HR informs the **ECO that a visa is being sought.** Then the ECO, based on the employment responsibilities**,** determines if the person's duties is eligible for an ITAR or EAR approval and signs the required certification on the I-129 form. The **ECO** coordinates with the outside attorney about such

certifications (the HR specialist informs the **ECO** when non-U.S. persons are provided an offer for an export-controlled position and it has been accepted).

These measures are meant to ensure that the **ECO** obtains the appropriate export license approval and briefs the hiring manager.

Once hired, the **ECO** identifies employees during new employee training who are non-US persons to inquire if they are working on instrumentation or the OCC flight operations. The **ECO** can verify the U.S. person" status of persons working on projects through the Staff Database Form (SDF). The database indicates the "U.S. person" status of persons with an active directory account. Based on their status, the **ECO** makes a license determination. The export authorization needed is either an export control non-disclosure letter or an export license. The **ECO** advises the hiring manager that export-controlled work cannot be initiated until a license has been secured from government authorities.

In addition to coordination with **HR**, the **ECO** works with "gatekeeper" positions of staff members who manage personnel – the **Fellows Coordinator**, **Division Administrators** and the, **Director of CE** -- to inquire about persons who may be non-U.S. persons and are a national of restricted country. The ECO also identifies the foreign person's advisor to ensure that no export-controlled work is being conducted in the same space.

A sample letter is attached as an exhibit to Section 6: Export License Procedures.

SDF – U.S. Person screening and ITAR screen for Personnel

SDF2: View Existing Entry - Citizen/VISA

UnSet ITAR

View Search Results | Search All Entries

Back to Main

General Requirements	
SD931 Signed	
ITAR Requirements	
ITAR Restrictions	
ITAR Eligible	Yes (US Citizen) No

Personal	
Keyfield	
Last Name	
First Name	
Middle Name	
Organizational	
Working Title	
Supervisor	
Primary Affiliation	
Employment	
Primary Employment Status	SAO Employee, postdoc, contractor, research associate
Start Date	
Exit Date	
Directory	
Email	
Citizen/VISA	
US Citizen/Status	Citizen. Perm resident, visa type, etc.
Visa Type	
Visa Expiration	
Citizenship 1	

Accounts	
CF Unix	Yes
SI AD	Yes

Building Access

SI Computers

Other Computers

Citizenship 2	
Citizenship 3	
Country of birth	
Country of residence	
Country of origin	

Edited	
Editor	
EditDate	

Country Group D

Country	[D:5] U.S. Arms Embargoed Countries[1]
Afghanistan	X
Armenia	
Azerbaijan	
Bahrain	
Belarus	X
Burma	X
Cambodia	
Central African Republic	X
China (PRC)	X
Congo, Democratic Republic of	X
Cuba	X
Cyprus	X
Egypt	
Eritrea	X
Georgia	
Haiti	X
Iran	X
Iraq	X
Israel	
Jordan	
Kazakhstan	
Korea, North	X
Kuwait	
Kyrgyzstan	
Laos	
Lebanon	X
Libya	X
Macau	

Country	[D: 1] National Security		[D:5] U.S. Arms Embargoed Countries[1]
Moldova	X		
Mongolia	X		
Oman			
Pakistan			
Qatar			
Russia	X		
Saudi Arabia			
Somalia			X
South Sudan, Republic of			X
Sudan			X
Syria			X
Taiwan			
Tajikistan	X		
Turkmenistan	X		
United Arab Emirates			
Uzbekistan	X		
Venezuela	X		X
Vietnam	X		
Yemen	X		
Zimbabwe			X

[1] Note to Country Group D:5: Countries subject to U.S. arms embargoes are identified by the State Department through notices published in the *Federal Register*. The list of arms embargoed destinations in this table is drawn from 22 CFR §126.1 and State Department *Federal Register* notices related to arms embargoes (compiled at http://www.pmddtc.state.gov/embargoed_countries/index.html) and will be amended when the State Department publishes subsequent notices. If there are any discrepancies between the list of countries in this table and the countries identified by the State Department as subject to a U.S. arms embargo (in the *Federal Register*), the State Department's list of countries subject to U.S. arms embargoes shall be controlling.

2. SAO Staff and Visitor Facility Access and Securing Workspaces

SAO conducts many meetings that are open to the community. Public meetings are fundamental research and are **not** subject to export-control facility procedures.

SAO provides office and laboratory space to employees and SI-affiliated persons in scientific, technical, and administrative positions. A list of types of persons who could be visiting SAO's facilities is provided in Attachment 3.2.1.

SAO's **Human Resources Department** (HR) and **Computational Facility** (CF) manage the issuance of badges through Harvard University for those individuals who are expected to be on-site for a period of 30-days or more. Each **Facility Manager** is responsible for ensuring that visitors are badged at their facility. Badges should be worn by all Smithsonian employees, affiliated staff, and visitors while in designated export-controlled areas.

Determining if an SAO Employee or Affiliated Person is Entitled to SAO I.D.

Primary Employment Status	Entitled to SAO ID (*)	SAO affiliated person	Description
S - SAO Employee	*		SAO Employee
J - SAO Research Associate (here)	*		Appointed by the SAO Director to conduct research with SAO scientists and occupy CfA office space
K - SAO Research Associate (not here)			Appointed by the SAO Director to conduct research with SAO scientists.
D - SAO Postdoctoral Fellow	*	x	SAO-funded researcher with a Ph.D. pursuing her/his own research, who applied to and was selected through an advertised, competitively reviewed fellowship program.
P - SAO Pre-doctoral Fellow	*	x	A graduate or pre-doctoral student pursuing her/his own academic research, who applied to and was selected through an advertised, competitively reviewed fellowship program.
L – SAO Visiting Scientist	*	x	A researcher with a Ph.D. conducting his/her own research, not selected through an advertised, competitively reviewed fellowship program. Part of the SAO Visiting Scientist Program. Generally, these researchers have positions with other universities and institutions and are visiting to pursue a collaborative effort.
N – SAO Visiting Student	*		A graduate or pre-doctoral student pursuing

		x	her/his own academic research, not selected through an advertised, competitively reviewed fellowship program. Part of the SAO Visiting Student Program (replaces non-Harvard Grad Student).
E - SAO Intern	*	x	Usually a current student (undergraduate or graduate, sometimes high school) assigned work and supervised by an SAO staff member as part of a predetermined internship project.
V - SAO Volunteer	*	x	Part of the SI Behind the Scenes Volunteer Program
C - CfA Contractor		x	A contractor with CfA office space, may be paid or unpaid.
O - CfA Visitor (Other)			A visitor who is here more than 30 days, hosted by SAO or HCO staff, and does not fall into any of the official visitor categories listed above.
W - CfA Collaborator/Account holder			External colleague collaborating with CfA staff (replaces Ongoing Collaborator/SAO and Remote Computer User).
X - Gone			

NOTE: Short-term visitors (here less than 30 days) do not need to be entered into the SDF. If the short-term visitor is already entered in the SDF as a CfA collaborator, that Primary Employment Status (PES) should remain the same. A guest card can be requested if the visitor requires building access.

* SAO-Affiliated Persons are any of the following:

Contractors who perform work similar to Smithsonian employees, such as temporary help firms' employees, volunteers, interns and fellows, visiting researchers, including scientists, scholars, students, and research associates.

Securing Workspaces:

- All persons with scientific, export-controlled or sensitive information are required to lock offices or labs with export-controlled instruments. When export-controlled records and computer equipment with export-controlled data are in open areas or cubicles, they must be stored in locked cabinets when not in use for more than thirty minutes.

- Badges are required to be worn in ITAR/EAR controlled labs, and restricted work areas, such as server rooms. These spaces have access controls on doors. Where export-controlled work or data have been identified, security best practices recommended two sets of controls: pass code and key lock or badge (the standard is "something you have" [key or access card] and "something you know" [pass code]).

- Computer rooms are secured with additional access controls. These limit entrance to a restricted "cleared" group of employees with SI credentials, based on job duties. Computer rooms are monitored with video surveillance. Hosts of visitors request that they sign in the visitor logbook.

- Each Facilities Manager maps the areas of the building where there is export-controlled activity and has signage in these areas that badges must be word and visitors are to be escorted.

- Keys or access cards to lab spaces containing ITAR/EAR controlled activities must only be in the possession of authorized persons and are to be concealed from view.

- Doors to lab areas with export-controlled projects should not be propped open.

- Employees should not allow tailgating into secured elevators or lab areas unless the person has a badge displayed.

- Those sharing ITAR or EAR-controlled lab space or attendance at meetings who are not U.S. citizens (or do not have permanent resident or other U.S. person status) must not be allowed access unless an export license has been obtained or export exemption/exception applies. Contact the ECO for advice about how to obtain an export license.

Export- controlled work areas: **SAO employees** and **affiliated persons** must advise the **ECO** when they collaborate with non-U.S. persons, be it SAO employees, fellows, or collaborators, so that a license determination can be made and they can be vetted against U.S. government denial lists. If the Host is not waiting in the lobby, the non-U.S. visitor then calls the Host. They can also call the Facilities Manager or the ECO, if at CDP, at (617) 496-7557 who will contact the Host or bring them to the office of the Host. PIs can have the ECO or their administrators sign in visitors

3. Visitor/Meeting Procedure

Each building has its own facilities policy, incorporating some combination of the following elements, based on the export-control sensitivity of the activities that occur there:

- Because SAO conducts ITAR - and EAR-controlled research, **SAO's employees** must escort all visitors in non-public areas, especially non-U.S. persons who visit the facility where ITAR/EAR-controlled work is taking place.

- **SAO employees** who wish to host non-U.S. contractors, sponsors, collaborators or visiting fellows and plan to visit an SAO facility need to send an email to the ECO with the information on the Visitor Request form or log into the "BreezN" program in advance (Attachment 3.2.3).

- Where there is a visitor sign-in procedure, **Hosts** are responsible for ensuring that their visitors and contractors sign in and wear a visitor badge. Access controls restrict access to elevators, offices, and workspaces without an employee badge for that building. Refer to Visitor policy. (OCC, CDP – 1st and 3rd floor), (and 160 Concord Ave -in certain instances)

- U.S. persons are provided a **blue** visitor badge. Non-U.S. persons are provided a **red** badge.

- If no pre-notification was prepared (on the Visitor form), the **Host** can check the name of the non-U.S. person against the U.S. Denial List (whenever possible, this screening should be completed in advance by the **ECO** or the **Facility Manager**). A consolidated denial list can be downloaded at www.mkdenial.com and enter the account number 70891 and password "Smithsonian". Enter the person's name and nationality and activate the screening.

Electronic Meetings with non-U.S. persons: If **SAO employees** interact -- at either the proposal or award phase -- either by email, teleconference, or webinar -- with non-U.S. persons and the project is export controlled, the non-U.S. person needs to qualify for a license exemption/exception. If a defense service under the ITAR, which involve "back-and-forth" consultations, discussions, training, troubleshooting, this action must be approved by specific license for ITAR. Note: The EAR does not recognize "service." The EAR only restricts the transfer of technical data, not the method of how it is transferred.

- If the non-U.S. person has access to EC information, he/she must receive prior approval via an export license, license exemption/exception, or Letter of Assurance, as determined by the ECO. This applies to pre-contract exchanges if controlled data will be discussed. The **PI/PM** or **DA** should contact the **ECO** with a Statement of Work, nationality of the person to whom the data will be transferred, when the exchange will occur. **If a license is needed for proposal phase, more information, per section 6, are required.** (Note: If they are a permanent resident of the US, no authorization is required.)

- All email with EC technology must be sent encrypted.

- Where there is no visitor sign-in, **Hosts** notify the **Facility Manager** or **ECO** when a non-U.S. visitor wishes access to office areas for meetings that are not public and request an access card. Facilities are locked after hours. Refer to Visitor policy for the building.

- Persons with SAO employee badges from other buildings are not required to sign in at OCC or CDP, however, they may elect to sign in the register for fire safety reasons.

4. Technology Control Plan Actions after a contract is approved and it has export-control clauses

Once a program has been identified as ITAR or EAR controlled, the ECO and PI, PM and DA evaluate what non-U.S. person or partner involvement are anticipated and plan for physical security such as badges for non-U.S. persons, physical barriers, locks on server rooms and other spaces that house ITAR data, separators, signage, etc. and requirements or export authorization for visits, phone calls, and emails.

References

SD 611 Export Compliance and Trade Sanctions Related to Research, Export and Museum Activities
SI Access Control Policies:
SD 212 - Federal Personnel Handbook, Chapter 731, Personnel Security
SD 213 - Trust Personnel Handbook, Chapter 731, Personnel Security
SD 224 - Identity Management Program
SD 420 - Security Operations and Policies
SD 600 - Collections Management Implementation Manual: Collections Space Security Standards
Office of Protective Services' Access Control Handbook
Leased Security Standards

Supplemental Materials

Letter That Needs to be Signed to Use 740.6 License Exception – Technology and Software Under Restriction (TSR) of the EAR

Sample Letter that Needs to be Completed by Non-U.S. Person to Use EAR License exception

Explanation of Export Control Classification Numbers

Appendix 3.2.a – Information Form for SAO Staff and Affiliated Persons Who Plan to Collaborate with Non-U.S. Persons on Export-Controlled Projects

Appendix 3.2.b – Non-Disclosure Agreement: Letter of Assurance for Non-U.S. "SAO-Affiliated Person" * To Permit Access to EAR-Controlled "Technology and Software Under Restriction" (TSR)

Letter that Needs to be Signed to Use 740.20 License Exception – Technology and Software Under Restriction (TSR of the EAR)

Non-Disclosure Agreement – Letter of Assurance for

Non-US "SAO employee"* To Permit Access to EAR-Controlled

or ITAR-Controlled Defense Technical Data by

Foreign National Employees in the United States As

Full-Time Employee of SAO

I, [NAME], acknowledge and understand that any technical data related to a defense article covered by the U.S. Munitions List or commercial controlled item on the Commerce Control List to which I have access provided by SAO, per authorization by the U.S. Department, Directorate of Defense Trade Controls exemption ITAR 125.4 b 10 and EAR 740 disclosed to me in my employment by Smithsonian Astrophysical Observatory is subject to the export controls of the International Traffic in Arms Regulations (ITAR) (Title 22, Code of Federal Regulations, Parts 120-130). I also acknowledge and understand that should not disclose this information to any non-U.S. person at SAO or from another organization. Should I inadvertently receive defense articles for which I have not been granted access authorization by the U.S. Department of State, Directorate of Defense Trade Controls, I will report such unauthorized receipt and acknowledge the transfer to be a violation of U.S. Government regulations.

In furtherance of the above, I hereby certify that all defense articles, including related technical data, to which I have access, will not be used for any purpose other than that authorized by the U.S. Department of State, Directorate of Defense Trade Controls and U.S. Department of Commerce, Bureau of Industry and Security will not be further exported, transferred, disclosed via any means (e.g., oral disclosure, visual access, facsimile message, telephone) whether in its original form, modified, or incorporated in any other form, to any other foreign person or any foreign country without the prior written approval of the U.S. Department of State, Directorate of Defense Trade Controls.

_____ _____

Signature Date

_____ _____

Name Unit

EAR LICENSE EXCEPTION STRATEGIC TRADE AREA (STA)

STA (**§ 740.20 License Exception Strategic Trade Authorization (STA)**") for transfer of controlled technology to an eligible non- U.S. person.

(a) Introduction

This license exception authorizes exports, reexports, and transfers (in-country), including releases within a single country of software source code and technology to foreign nationals, in lieu of a license that would otherwise be required pursuant to part 742 of the EAR to countries listed in A: 5 and if specifically authorized, A:6 as listed in Supplement No. 1 to Part 740 of the EAR.

EXPORT COMPLIANCE LETTER OF ASSURANCE AND CONSIGNEE STATEMENT "STA" – "STRATEGIC TRADE AREA" FOR DISCUSSIONS RELATED TO EXPORT-CONTROLLED INFORMATION (NOT TO BE PUBLISHED) UNDER THE U.S. EXPORT ADMINISTRATION REGULATIONS AND THE WASSENAAR ARRANGEMENT

[NAME]

SAO

Cambridge

(i) Is aware that discussions related to [EMCCDs, and optical components] that will not be published, may include export controlled information under Export Control Classification Number **ECCN 6E002** of the Export Administration Regulations and this information is authorized to be transferred from **SAO to** [NAME] pursuant to License Exception Strategic Trade Authorization (STA) in § 740.20 of the United States Export Administration Regulations (15 CFR 740.20);

(ii) Has been informed of the **ECCNs** (6E002) noted above by Smithsonian Astrophysical Observatory (SAO)' (See description below)

(iii) Understands that "items transferred "pursuant to License Exception STA may not subsequently be retransferred to other nationals of non-eligible countries, pursuant to paragraphs (a) or (b) of License Exception APR (15 CFR 740.16(a) or (b));

(iv) Agrees to obtain a prior "consignee statement" from a new party, similar to this one, when using License Exception STA for any release to another party within the same country or to another eligible country (**Argentina, Australia, Canada, Europe, Japan, South Korea or New Zealand)**, of items previously received under License Exception STA;

(v) Agrees not to export, reexport or transfer these items to any destination not listed above (in iv), for use or for a user prohibited by the United States Export Administration Regulations;

(vi) Agrees to provide copies of this document and all other export, reexport or transfer records (*i.e.*, the documents described in 15 CFR part 762) relevant to the items referenced in this statement to the U.S. Government as set forth in 15 CFR 762.7;

(vii) (not applicable)

(viii) Agrees to permit a U.S. Government end-use check with respect to the export of items (technical information) (*Explanation: this is unlikely because the meeting is not an export of a tangible item that the government can track in their export system. Proof would be a meeting agenda showing that all participants are a citizen or permanent resident of one of the eligible countries.)*

NAME: _____

TITLE: _____

DATE: _____

EXPLANATION OF EXPORT CONTROL CLASSIFICATION NUMBERS

[provide a description of what is controlled – i.e., Cameras or CCD] having the following:

6A002 Optical sensors or equipment and components (cont'd)	a.2. Image intensifier tubes and specially designed components therefor, as follows: a.2.a. Image intensifier tubes having all of the following: a.2.a. 1. A peak response in the wavelength range exceeding 400 nm but not exceeding 1,050 nm; a.2.a.2. Electron image amplification using any of the following: a.2.a.2.a. A microchannel plate with a hole pitch (center-to-center spacing) of 12 _m or less; or a.2.a.2.b. An electron sensing device with a non-binned pixel pitch of 500 _m or less, specially designed or modified to achieve 'charge multiplication' other than by a microchannel plate; *and* a.2.a.3. Any of the following photocathodes: a.2.a.3.a. Multialkali photocathodes (e.g., S-20 and S-25) having a luminous sensitivity exceeding 350 _A/lm; a.2.a.3.b. GaAs or GaInAs photocathodes; or a.2.a.3.c. Other "III-V compound" semiconductor photocathodes having a maximum "radiant sensitivity" exceeding 10 mA/W; a.2.b. Image intensifier tubes having all of the following: a.2.b.1. A peak response in the wavelength range exceeding 1,050 nm but not exceeding 1,800 nm; a.2.b.2. Electron image amplification using any of the following: a.2.b.2.a. A microchannel plate with a hole pitch (center-to-center spacing) of 12 _m or less; *or* a.2.b.2.b. An electron sensing device with a non-binned pixel pitch of 500 □m or less, specially designed or modified to achieve 'charge multiplication' other than by a microchannel plate; *and* a.2.b.3. "III/V compound" semiconductor (e.g., GaAs or GaInAs)

	photocathodes and transferred electron photocathodes, having a maximum “radiant sensitivity” exceeding 15 mA/W; a.2.c. Specially designed components as follows: a.2.c.1. Microchannel plates having a hole pitch (center-to-center spacing) of 12 □m or less; a.2.c.2. An electron sensing device with a non-binned pixel pitch of 500 □m or less, specially designed or modified to achieve 'charge multiplication' other than by a microchannel plate; a.2.c.3. “III-V compound” semiconductor (*e.g.,* GaAs or GaInAs) photocathodes and transferred electron photocathodes; **Note:** 6A002.a.2.c.3 does not control compound semiconductor photocathodes designed to achieve a maximum “radiant sensitivity” of any of the following: a. 10 mA/W or less at the peak response in the wavelength range exceeding 400 nm but not exceeding 1,050 nm; or b. 15 mA/W or less at the peak response in the wavelength range exceeding 1,050 nm but not exceeding 1,800 nm.
6A002 Optical sensors or equipment and components (cont’d)	a.3. Non-“space-qualified” “focal plane arrays” as follows: a.3.a. Non-“space-qualified” “focal plane arrays” having all of the following: a.3.a.1. Individual elements with a peak response within the wavelength range exceeding 900 nm but not exceeding 1,050 nm; *and* a.3.a.2. Any of the following: a.3.a.2.a. A response “time constant” of less than 0.5 ns; *or* a.3.a.2.b. Specially designed or modified to achieve 'charge multiplication' and having a maximum “radiant sensitivity” exceeding 10 mA/W. a.3.b. Non-“space-qualified” “focal plane arrays” having all of the following: a.3.b.1. Individual elements with a peak response in the wavelength range exceeding 1,050 nm but not exceeding 1,200 nm; *and* a.3.b.2. Any of the following:

	a.3.b.2.a. A response “time constant” of 95 ns or less; *or* a.3.b.2.b. Specially designed or modified to achieve 'charge multiplication' and having a maximum “radiant sensitivity” exceeding 10 mA/W. a.3.c. Non-“space-qualified” non-linear (2-dimensional) “focal plane arrays” having individual elements with a peak response in the wavelength range exceeding 1,200 nm but not exceeding 30,000 nm; a.3.d. Non-“space-qualified” linear (1-dimensional) “focal plane arrays” having all of the following: a.3.d.1. Individual elements with a peak response in the wavelength range exceeding 1,200 nm but not exceeding 3,000 nm; *and* a.3.d.2. Any of the following: a.3.d.2.a. A ratio of 'scan direction' dimension of the detector element to the 'cross-scan direction' dimension of the detector element of less than 3.8; *or* a.3.d.2.b. Signal Processing In The Element (SPRITE); a.3.e. Non-“space-qualified” linear (1-dimensional) “focal plane arrays” having individual elements with a peak response in the wavelength range exceeding 3,000 nm but not exceeding 30,000 nm; a.3.f. Non-“space-qualified” non-linear (2-dimensional) infrared “focal plane arrays” based on 'microbolometer' material having individual elements with an unfiltered response in the wavelength range equal to or exceeding 8,000 nm but not exceeding 14,000 nm; **Technical Note:** For the purposes of 6A002.a.3.f, 'microbolometer' is defined as a thermal imaging detector that, as a result of a temperature change in the detector caused by the absorption of infrared radiation, is used to generate any usable signal. a.3.g. Non-“space-qualified” “focal plane arrays” having all of the following: a.3.g.1. Individual detector elements with a peak response in the wavelength range exceeding 400 nm but not exceeding 900 nm; a.3.g.2. Specially designed or modified to achieve 'charge multiplication' and having a maximum “radiant sensitivity”

	exceeding 10 mA/W for wavelengths exceeding 760 nm; *and* a.3.g.3. Greater than 32 elements.

3.3 IT Security on Networks, Laptops, Mobile Devices

Purpose

To ensure that all networks, electronic communications, file transfers follow export compliance security restrictions when provisioning network access, collaborating with non-U.S. persons and sending email. To ensure that IT protocols, anti-virus programs and other security measures are continuously monitored and updated.

Responsible Positions

- The Office of Chief Information Officer (OCIO) at SI - has primary responsibility for IT networks, back up programs, antivirus networks, etc.
- All new employees – are required to take, as part of the on-boarding process and annually thereafter, on-line training and agree to adhere to SD 931 User Agreement which communicates appropriate and safe usage of SAO's networks and email. OCIO distributes periodic newsletters and warning about IT security risks.
- SAO - The Manager of the Computational Facility provisions the majority of the employee networks at SAO.
    a. High Energy Astrophysics Division (HEAD) provides access for its employees.
    b. Central Engineering provisions IDs for other groups.
    c. OCC manages the networks related to Chandra Operations Center and email.

Records

Date new persons receive access in the IT log
Requests to provision a database or directory
ECO approval
Agreement to SD 931
IT audit reports

Procedure

1. SD 931 User Agreement

All new employees (SAO, (Federal and Trust)) must sign SD 931 User Agreement that communicates appropriate and safe usage of SAO's networks and email as part of the on-boarding process. IT security training is required to be retaken annually.)

2. Research U.S. Person/Non-U.S. Person Status of Those Receiving Network Access

Each responsible IT group must research the U.S. person/non-U.S. person status of any person to receive network access and understand which networks contain files under EAR/ITAR restrictions. The **Database Administrator** should consult with the **ECO** for applicable authorization, nationalities, etc. Certain nationalities cannot qualify for a license, these are countries listed in section 126.1 on the ITAR. If someone from an unauthorized country were provided access—such as the People's Republic of China— this would be a serious violation for SAO.

3. Develop a Distribution List of Persons Involved in ITAR- or EAR-Controlled Programs

The Manager of Computation Facility works with the **Manager of Sponsored Programs** and the **ECO** to develop a distribution list of persons involved in ITAR or EAR-controlled programs to communicate specific Technology Control Plan and IT requirements. The **Manager of the Computation Facility** ensures that every group who provisions its own accounts has a written procedure for determining folder locations for export controlled-controlled data, rules for assignment, and evidence for having access to the directory – proof of U.S. person status or export license authorization.

4. Computing Environment

SAO uses a combination of Microsoft Windows servers, work stations, Macbooks and Linux servers. NIS (Network Information Services) is used for Linux users. Microsoft Windows user accounts are provisioned using Active Directory. Guests may obtain guest internet access from the Harvard network.

5. Active Directory

The Active Directory is used for more administrative employees (approximately 100 people out of 1,200). This is the responsibility of the Director of CF.

6. Encryptions for Persons Traveling with a Laptop

All laptops provisioned by SI have disk encryption. Prior to NASA travel, the ECO, when a notice is sent, reminds the traveler to activate the disk encryption and not to travel with export-controlled technology that is not needed for the trip. EC technology to be used for the travelers own use can be legally exported if the files/laptop are encrypted and not shared with foreign nationals. The **Manager of Computation Facility** offers to persons traveling with a laptop who need to export CUI for their own use can obtain a flash drive with encryption for the storage of EAR-controlled data which is encrypted. ITAR data should be fully secured and should not be exported without authorization if it will be shared during travel. No ITAR data will be permanently stored on an external hard drive or flash drive without being encrypted or without password protection. Only flash drives approved by CF should be used.

Hard drives are removed from PC before they are scrapped.

7. Additional File and Hardware Protections

Each file and hard-copy document subject to the ITAR/EAR must have a banner listing it as "CUI" and a unique identifier in the file name. The IT monitoring system must be able to record all transfers and persons accessing files. File transfers take place over SSH (Secure Shell) using either Service

Connection Point (SCP) or Secure File Transfer Protocol (SFTP). All personnel who work on ITAR or EAR-licensed programs are required to maintain double password protection on their computers for accounts and use screen savers. These screen savers must activate after ten minutes or less of computer inactivity. Screen savers of persons monitoring telescopes can be extended to four hours or less.

8. Emailing Export-Controlled Data

ITAR/EAR controlled data attached to emails or in the body of the email must be transferred in a secure manner using encryption technology. Not all persons use the same email system at SAO. All users must use a method to transfer data using encryption when sending to international persons/sites (Pretty Good Privacy (PGP), WinZip, encryption) and/or password protection whether using a Gmail account or SAO Outlook platform and must restrict sharing functions. All SAO badged persons who handle export-controlled data must enable multifactor authentication on their gmail account.

9. Partner-Supplied ITAR/EAR Controlled Data

Any partner-supplied ITAR/EAR controlled data, whether or not technical data is electronic or paper, must be treated as falling under ITAR/EAR regulations and handled properly in accordance with these procedures. They must have unique identifiers and "CUI - ITAR-controlled" or "CUI - EAR-controlled" markings on it.

10. Information Security Accreditation and Audits

The **Manager of the Computation Facility** is involved in Federal Information Security Management Act (FISMA) accreditation, which is renewed approximately every three years. This position provisions systems and storage.

SAO's IT network and management is audited by an external auditor annually by Federal Desktop Core Configuration (FDCC) audit and Chandra is audited by NASA auditors. FDDC compliance checks 300 requirements dealing with the SAO NIS domain and the HEA NIS domain are inclusive of export control federal standards. The Center for Information Security (CIS) publishes security settings for different operating systems. These settings are used for hardening. Cent O/S, a form of Linux, runs benchmarks against CIS as scripts to test against policy.

11. Disaster Recovery Plan for Electronic Files

The SI Disaster Recovery Plan developed and maintained by Office of the Chief Information Officer (OCIO) and this office stores SAO's backup for critical computing resources in Herndon, Virginia. It is a live backup written over the network.

12. SAO System Security Plan

SAO has a System Security Plan which is published by the Smithsonian Computer Security Manager. It is extensive and contains network diagrams showing the separation of the Harvard Guest wireless network from the SAO and Chandra Operations Control Center network. OCC file backup data is managed by OCC IT Director, who backs up data over the network and is stored at CDP.

13. Other Non-Engineering Tasks of ITAR Data

Translation, data integrity, and any other non- engineering tasks of CUI data that involves outside persons must be accomplished by U.S. persons (citizens or permanent residents).

14. Cloud Storage

Any cloud solution for storage of ITAR/EAR-controlled data must be managed by a U.S. company, the server must be physically located in the U.S. or an allied country, and must have adequate security controls. It cannot be hosted in a country listed in ITAR 126.1 proscribed country and should be certified to Fedramp moderate.

15. Data Destruction

Destruction of electronic and hard copy data is done in a secure manner (i.e., destruction of hard drives, and using shredders for hard copy) with the approval of the **ECO,** when deemed necessary according to IT procedures for erasure. Records of destruction must be maintained.

Supplemental Materials

Appendix 3.3.a – Persons subject to the SD 931 and Mobile Device Policies including Supplemental

Export Compliance Procedures for Travel with Mobile Devices and Research Equipment

4.0 Procurement Controls and Import Screening Process

Purpose

To ensure export-controlled (EC) drawings or technical specifications are provided to vendors only after assuring that they will be safeguarded (in the U.S.) or approved by an export license authorization (and safeguarded) to foreign vendors.

Responsible Positions

- Division Administrators/Program Managers
- Principal Investigators
- Procurement Officers (Buyers)
- Export Compliance Officer (ECO)
- PI/Requestor of purchase

Records Maintained

- Export Compliance Checklist
- Schematics and files with Export Compliance markings
- Non-disclosures (NDAs)
- Import Checklist Form ECP 2
- Denial List Screening Report
- End-use statement
- License Application with technical specs, etc.- DSP-5
- Records of communication about ITAR/EAR data for and with prospective collaborators

Procedure

Procurement procedures where technical data is supplied

Procurement Request Initiated by PI or Administrator Where Information/Specifications are Provided to Vendor

The researcher/scholar, PO/user/requestor researches an item to be purchased. If the item is EC and specifications need to be sent to a vendor or received from the vendor, the sender must assess if EC technical data is being transferred and if, so ensure it is properly marked. Also refer to Import Procedure on EC Website when importing items.

1. Determination if EC Technical Data is Being Provided

EC technical data is information which is required for the design, development, production, manufacture, assembly, operation, repair, testing, maintenance or modification of items on the U.S. Munitions List (USML) or the Commerce Control List (CCL). This includes information in the form of blueprints, drawings, photographs, plans, instructions or documentation. Possible end-items are

space-qualified items, optics, mirrors, IR cameras, items to be used in space and services like testing and coating, digital signal processors, cameras, lenses, etc.

Prior to sending technical information to a foreign vendor, engineers and scientists must first the technology by reviewing the ”controlled item list” and/or the U.S. Munitions List (USML) or the Commerce Control List (CCL) and the alphabetical index. Contact the ECO if necessary. The lists are on the export compliance website.

Prior to transferring any EC technical data to a vendor, the sender must determine if the information is design, manufacturing or repair data that generally is not available from public sources, the internet, in a catalog, or other available document. If it is not public information, then the sender must determine if the information provides “know how”.
The sender needs to consult with the **PI** and **ECO** to make a join determination after evaluating the USML or CCL.

2. **Marking of Data**
   If the technical data is export controlled, it must be marked on the file/document and file name “CUI”. “**WARNING** - This document contains technical data whose export is restricted by [the International Traffic in Arms Regulations (CFR 22, parts 120-130] *or* [the Export Administration Regulations15 CFR 730- U.S.C., App. 2401 et seq]. Not to be released to foreign persons without export authorization. Violations of these export laws are subject to severe criminal penalties.” This is particularly important when sending to foreign vendors or when non-U.S. persons are collaborating on a project. Provide the order information to the **Procurement Officer in SPP**.

3. **Procedures for Purchases that are Initiated by Procurement Officer**
   Procurement Officers receive a request to purchase an instrument, compound or component for a researcher and determines if the item needs a drawing/design information to be sent to a foreign vendor.

4. **Research the Vendor**
   If the vendor is foreign, especially located in a country listed in ITAR Part 126.1 embargoed countries, like China, and there are drawings or specifications, the **Procurement Officers** need to confirm with the **ECO** and the **researcher** that the technical information is not **ITAR-controlled** and not **EAR-controlled**.

5. **Export Compliance and Import Information**
   The **Procurement Officer** asks the (foreign) vendor if the item is export controlled and obtains information about the item’s origin, Harmonized Tariff code and export control number. This is requested in case the item will be exported in the future and to facilitate the import from the vendor to the U.S. Communicate the information to the ECO, even if the answer is that the item is not export controlled.

6. **Transfer of EC Data to U.S. Vendors**
   EC technical data must be transmitted securely to the vendor. **If the vendor is in the U.S. and the part is ITAR regulated**, ask if the company

- Is ITAR registered?
- Employs only-U.S. persons and is the item manufactured in the U.S.?
- Has a Technology Control Plan to secure any data or drawings?

If the three qualifications above are met, you may use the vendor.

If you have EAR EC technical data, and the U.S. vendor will expose the information to non-U.S. persons, have the vendor contact the ECO prior to transfer to determine if a Letter of Assurance or export license is required for the deemed export.

7. Export License Required?

If the item could be EC-controlled, contact the **ECO** to see if an export license is required for the drawing to be provided to the foreign vendor. Make sure that the drawings are marked "ITAR controlled – not to be released to foreign persons, per 22 CFR Part 125" or "EAR controlled – not to be released to foreign persons, per 15 CFR Part 774". For ITAR and EAR 600 series items, check that the country is not proscribed by the ITAR and is not listed on 126.1 of the ITAR. **If it is on the 126.1** list, consider selecting a U.S. vendor or select an eligible foreign vendor (NATO country) and have the ECO prepare a procurement license. Attachments needed for an export license are the drawing, quote from the vendor to make the part.

8. Excluded Party List/Government Denial List

Procurement Officers submit the U.S. vendor name through the Excluded Party list per PCPM 5. If they are a foreign vendor or the name was approved more than a month earlier, run the name through the consolidated screening program www.mkdenial.com.

9. **An Order for a Foreign Vendor to Make an ITAR Component**

If the order is for a foreign vendor to make an ITAR component, do not provide any ITAR-controlled information without a license – including a procurement license or a TAA for ITAR controlled technical exchanges depending on the amount of technical exchanges. When an ITAR item will be imported, a **Procurement Officer** advises the **ECO** and **Accountable Property Manager** so that any necessary ITAR import arrangements can be made.

10. Recordkeeping

The SPP filing room could contain export-controlled information. The key to the room is held by only a few individuals and the room is locked during non business hours. The room is located on the 4th floor.

5.0 Employee Training

Responsible Positions

- Export Compliance Officer and Back-up
- SI OSP Administrator
- Persons involved with EC projects: PIs, Administrators, Program Managers, HR, Procurement, Facilities Manager, IT Managers, Contractors, Collaborators, and Engineers

Records Maintained

- All logs are compliance documents and must be maintained for five (5) years.
- Visitor Sign-in Log maintained by ECO
- Inspection Log of security

Purpose

All employees and contractors working with EC data must attend training to address the Technology Control Plan at SAO:

- Physical security requirements – access controls at facilities and labs
- Human Resources – use by non-U.S. persons and when a license is required
- Storage security requirements - hardcopies of ITAR-controlled information is kept within locked storage.
- Data security procedures, (at SAO facility and client locations) - screen savers, PIN security on cell phones, marking and disk encryption on laptops.
- Records - When the project is over, the Administrator determines how long ITAR records need to be stored (must be a minimum of five years).

Procedure

1. **Determining Who Needs Access to EC Data**
   The ECO meets with the PI and PM to determine what persons require access to EC Controlled Data. These persons are noted in the Project TCP and must attend training.

2. **Providing Training**
   Training is provided specific to the project, or is available on-line offered at SI Training site, or on SAO EC site under the ”Training” tab.

3. **Maintaining Records of Training**
   Records of the training are maintained by the ECO or generated by the online training program

4. Additional Training Materials

Additional training materials are available on the SAO Export Compliance web page, including

Reference

Note – Refer to the Technical Data exemption for university personnel who are full-time employees and for multi country space programs per 125.4 of the ITAR.

120.10 of the ITAR - Technical Data -- Any information which is required for the development, design, manufacture, production, assembly, operation, repair, testing, maintenance or modification of a (defense) item.

EAR – Technology is specific information necessary for the development, production or use of a product. The information takes the form of “technical data” or “technical assistance.”

For dual use items - Depending on the EAR classification, access to the lab may require controls. Often, the EAR authorization can be handled internally by the SAO ECO by preparing a Technology and Software Letter of Assurance for persons that are from countries located in Group B listed in Supplement 1 to Part 740 of the EAR. Nationals of China, Vietnam, the former Soviet nations, etc. will most likely require an export license. The physical access controls must restrict other persons.

6.0 Obtaining Approval to Release Technical Data to Non-U.S. Persons

Purpose

The TCP requires research institutes that are involved in projects related to export-controlled topics (ITAR or EAR) to identify controlled data. Additionally, the institute must obtain an export license prior to releasing controlled data to a non-U.S. person

Responsible Persons

- Export Compliance Officer (ECO)
- Program Manager (PM)
- Principal Investigator (PI)
- Department Administrator (DA)
- Procurement Officers (Buyers)
- Technology Control Officers
- Human Resources
- Conference Committee Members
- Accountable Property Officer

Records

- Export licenses
- NDA
- NASA form
- Communications from NASA
- EC form 1

Procedure

This section explains the license processes for license authorizations identified in 3.1 #4.

1. **Releasing Data to Non-U.S. Persons**
   If export-controlled information needs to be released to a non-U.S. person (i.e., collaborator), PIs and PMs must contact the ECO in advance (one to two months) to explain what technology needs to be transferred. The PI or PM assists the ECO in determining the classification, so the ECO can identify if the data is ITAR or EAR controlled and can assign the appropriate export license authorization.

2. **Identifying Contracts and Grants with Export Compliance Clauses**
   A license determination is also required to be made for export compliance if the contract contains clauses that restrict non-U.S. persons from participating without government approval, or a clause states that there is "Controlled Unclassified Information" (CUI), or that an export approval may be required. Activities are considered not export controlled if the sponsor informs us that the technical data is not controlled and the diligence and rationale for the determination is deemed reasonable. If there is no evidence of a previous DDTC commodity jurisdiction or BIS classification, the ECO first assesses if the technical data can be transferred as public domain information or by an exemption/exception, by inquiring the author or source, as follows:

Type of Transfer	PI Considerations	Export License Authorization
If the information could be declared as able to be released to the public domain (conference, meeting, proposal, NASM signage)	Does the technical data relate to basic academic principles, is the technical data published (by the author or another source), or is the technical data provided freely by the government (i.e., NASA) or the manufacturer? Is the information in enough detail to be export controlled?	Papers can be cleared through SAO Conference Committee, by the cognizant organization (NASA) or formal submission to DDTC or DOD. See Process in 3.1 #7 for clearing items through Dept. of Defense Office of Prepublication and Security Review (DOPSR). The website explains the process. NASA process is to provide approval via form NF 1676. Refer to their handbook.
To confirm jurisdiction is not controlled by the ITAR	PI provides information when there is doubt if ITAR.	ECO can submit the information to DDTC as ac commodity jurisdiction request on form DS-4076. The process takes 60 days and during that time, the technical data has to be treated as ITAR-controlled. The DDTC can declare the technical data as not being subject to the ITAR. Then SAO needs to determine if the technical data is subject to the EAR and is on the Commerce Control List (Part 774.)
If the transfer is a specification that is going to a foreign vendor who is able to perform the service as a "build-to-print activity"	ITAR-controlled data will be transferred during a one-time event.	This occurs in situations such as a pre-contract presentation to non-U.S. persons or release of specifications under the ITAR: the ECO can submit a description or copy of the specifications attached to a DSP-5.
If the technical data exchange is an on-going activity to a non-U.S. person in the U.S. who is employed or sponsored by SAO	For this, the PI needs to provide the following about the non-U.S. person: Passport Visa CV	ECO prepares a "deemed export" foreign national license on a DSP-5 for ITAR-controlled technical data or form BIS-748 for technical data controlled under the CCL. The license will expire when their work visa expires. The non-

	Scope of the work Description of the Technology Transfer – what will be transferred and it what form (access to a database, access to a lab and equipment, etc.) Any permanent ties to U.S. – (some things the U.S. government considers - ownership of real estate, family members in the U.S. living with them.)	U.S. person needs to sign an ITAR NDA for ITAR foreign national license. The PI needs to review any provisos that restrict the license or establish information about records that must be maintained.
If the technical data transfer is on-going to a non-U.S. party	The PI and PM need to provide: Scope of the program Description of the program Nature and form of technical data to be transferred Names of all U.S. and non-U.S. parties that need access to the information and whether the parties need to talk to each other or just SAO.	ECO needs to prepare a Technical Assistance Agreement per 124 of the ITAR.
If the non-U.S. parties have subcontractors who will need access to the technical data but will not need to communicate directly with SAO	The time length of the project (up to 10 years). The ECO follows the agreement guidelines posed on the DDTC website to complete the DSP-5 form to which documents will be attached Transmittal letter Agreement Technical descriptions Part of the contract that describes the scope Any other attachments that are relevant, such as related export	ECO lists the parties as sub licensees on the TAA. The sub licensees need to sign NDA.

	licenses	
The data is controlled under the EAR	Employees – the license duration is the same as their visa expiration. No need for a license once the person receives a green card. Collaborators can sign STA or TSR letter of Assurance for eligible countries. Not eligible for space and some IR camera technology. If no license exception is eligible (MT controlled or the country is not eligible), a license is required.	The ECO determines if a license exception is permitted. See 3.1

.

3. License Management

Once the license has been approved, the ECO needs to communicate with the PI to obtain the signed ITAR NDA and keep a record. The NDA must be signed by the PI and the consignee, the foreign national.

a) License provisos: The ECO reviews the provisos with the PI and the non-U.S. to see if they are acceptable. If they are too restrictive, the ECO can petition to DDTC to remove or revise the provisos.

b) Reporting - The ECO also must report the first technical data transfer made to the foreign national and in what form the transfer took place.

c) License Files – The files, both pdf and signed and unsigned copies in the D-Trade program are maintained by the ECO. The ECO posts the licenses in pdf form on the export compliance website for review by Sponsored Programs staff and PIs.

References

Defense Office of Prepublication and Security Review

DDTC TAA & Agreement Guidance

Supplemental Materials

Appendix 6.0.a Technology Control Plan Form

Appendix 6.0.b Description of Technology Export Controls From Current SAO Export Compliance Web Page "Exports and Research Exemptions"

Appendix to Technology Control Plan

Appendix 3.2.a – Information Form for SAO Staff and Affiliated Persons Who Plan to Collaborate with Non-U.S. Persons on Export-Controlled Projects

If your research is export-controlled and you wish to work with a non-U.S. person who will be visiting from a foreign country (including webinars, skype and telecoms), then this is an "export." If your equipment that they will be using is export-controlled, then we will need to obtain an export license. Please assist by providing the information below. Email to export@cfa.harvard.edu. If you believe the visit involves **fundamental research,** please complete also.

SUBMITTED BY: PROJECT: CONTRACT NO /DESIGNATED CODE: SPONSOR: TECHNICAL CONTACT NAME AND EMAIL PHONE NO:

Information needed	Response
1. Name (individual or group) 2.	
3. Name of Institution	
4. Address in home country	
5. Nationality (If more than one person, complete the list at the end.)	
6. Project (SOW)	Attach to email
7. Explain the nature of their visit	Provide a summary to explain your project, what the person(s) will be doing here – receiving training – provide agenda, assisting with research, what technology they need to have access to in order to perform their job, in what form the technology will be – attach. Limit access to only what they need to perform their function.
8. Sample Data Input (Provide details if the information is	

fundamental research or in the public domain)	
9. Sample Data Output	
10. Contact as US Government agency familiar with project (NASA)	
11. Technology Control Plan	ECO
12. License required?	ECO
13. If ITAR - Proper Statement in item 20 – of DSP-5 “For visit to United States for	ECO
14. Resume or description of organization	
Approved by ECO	

Appendix 3.2.b Non-Disclosure Agreement: Letter of Assurance for Non-U.S. "SAO-Affiliated Person"* To Permit Access to EAR-Controlled "Technology and Software Under Restriction" (TSR)

I, [*name of non-US person],* acknowledge and understand that certain research or technical data related to a controlled technology or software per the Commerce Control List of the Export Administration Regulations (15 CFR Parts 730 – 774) to which I may have access and or is disclosed to me in my affiliation with Smithsonian Astrophysical Observatory is subject to export controls and is permitted by **license exception TSR "Technology and Software Under Restriction."**

The controlled research technology, data or software may not be disclosed to others without permission by my advisor/supervisor. Such data or software will be marked "**export controlled** – **TSR."** These controls are related primarily **to CCDs, adaptive optics, deformable mirrors, high speed processors, rad hardened electronics, infrared technology, instrumentation or encryption** controlled by the U.S. Department Commerce, Bureau of Industry and Security.

I also acknowledge and understand that should I inadvertently receive controlled data or software for which I have not been granted access authorization by the U.S. Department Commerce, Bureau of Industry and Security, I will report such unauthorized receipt and acknowledge the transfer to be a violation of U.S. Government regulations. (Similar items and technology as above that are "space qualified" may controlled as a 'defense article" by the U.S. Department of State, Directorate of Defense Trade Controls requires a specific export license and to obtain such a license, I will be requested to provide information, such as a passport and CV prior to any data release).

In furtherance of the above, I hereby certify that all controlled articles, including related technical data, to which I have access will not be used for any purpose other than that authorized by the provisions of the export license exception TSR (part 740.6 of the EAR) and will not be further exported, transferred, disclosed via any means (e.g., oral disclosure, visual access, facsimile message, telephone) whether in its original form, modified, or incorporated in any other form, to any other non-U.S. person or any foreign country without the prior written approval of the appropriate export license agency as indicated above.

_____ _____

Signature Date

Appendix 3.3.a Persons subject to SD 931 and Mobile Device Policies including Supplemental Export Compliance Procedures for Travel with Mobile Devices & Research Equipment

Primary Employment Status	Code	CF Account (X) SI Computer Account (X*)	SAO-Affiliated Person	Included in census, online directory	SD931
Harvard Graduate Student - Astronomy	A	X		X	
CfA, both SAO and HCO	**B**	**X***	**X**	**X**	**X**
Contractor	**C**	**X**	**X**	**X**	**X**
Intern - SAO	**E**	**X**	**X**	**X**	**X**
Harvard Graduate Student - Other	G	X		X	
Harvard Cardholder (here)	F	X		X	
Harvard	H	X		X	
Postdoctoral Fellow – HCO when working on SAO grants/contracts	**I**	**X**		**X**	**X**
Postdoctoral Fellow - SAO	**D**	**X**	**X**	**X**	**X**

Research Associate - SAO (here)	**J**	**X**	**X**	**X**	**X**
Research Associate - SAO (not here)	**K**	**X**	**X**		**X**
Visiting Scientist - SAO	**L**	**X**	**X**	**X**	**X**
Visiting Scientist - HCO	**M**	**X**		**X**	**X**
Visiting Student - SAO	**N**	**X**	**X**	**X**	**X**
Visitor - Other	**O**	**X**		**X**	**X**
Pre-doctoral Fellow - SAO	**P**	**X**	**X**	**X**	**X**
Harvard Cardholder (not here)	R	X			
SAO	**S**	**X***	**X**	**X**	**X**
Volunteer - SAO	**V**	**X**	**X**	**X**	**X**
CfA Collaborator (When provided access on SAO network)	**W**	**X**			**X**
Gone	X				

Appendix 6.0.a Technology Control Plan Form

Smithsonian Astrophysical Observatory
Technology Control Plan

Date:[/ /]
Version
All sections are required.

Project Information Principal and Investigator
Project Title:

PI

First Name Last Name

Program Manager

First Name Last Name

Grant or Contract No.:

Export-Controlled Information and Instruments
List of export-controlled information and hardware in your lab: Include all controlled technology, technical data, and software. Include any planned international travel for meetings and conferences

Is there a sponsored research agreement, grant or contract involved? If yes, indicate number above.
YES NO

Is there a nondisclosure agreement or other agreement preceding the sponsored research agreement involved?
YES NO If yes, provide date and parties

Export-Controlled Information (continued)

Personnel with Access to Export-Controlled Information

Provide full name of all staff, visitors, and collaborators; include export control training date for all personnel.

First Name	Last Name	Date of EC Training

Security and Screening

Physical Security

Identify and describe physical security measures taken: Instruments and project information may require physical security measures such as dual-access controlled areas, secure doors, badges, and locked cabinets for ITAR/EAR data.

Computer and Data Storage Security

Describe where data is stored and steps to be taken to comply with computer & data storage security: ITAR/EAR project information should be protected. This may include additional password protection for all computers involved with the project. No access privileges to non-US collaborators without an export license. Electronic file transfers, data storage on information networks and emails of export-controlled need to be encrypted

I

Personnel Screening

Describe procedures for positive identification of all personnel on project: All personnel must be screened against restricted party lists to ensure sharing of information is allowable under the export control regulations. All personnel exposed to controlled data must have received Export-Control training. Changes in personnel must be reported to the Export Compliance Officer in SPP immediately for update to this TCP.

Security and Screening

Evaluation Dates of Technology Control Plan

Please provide dates of planned periodic review (minimum is once a year).

All TCPs must be reviewed by the PI on a periodic basis, at a minimum annually. This review includes ensuring that all sections of the TCP are up to date. Any changes to the control measures need to be reported. The Export Control Specialist will follow up with the PI on these dates to receive TCP self-audit evaluation results.

Signatures / Approval

Principal Investigator signature

PI Name _____ Date _____

PM Name _____ Date _____

Sponsored Programs and Procurement approval

Natascha Finnerty, Export Compliance Officer _____ Date _____

Upon completion of the TCP, the PI and Project Manager must sign and furnish a copy to the Export Compliance Officer in SPP, and the Divisional/Department Administrator. Upon approval of the TCP by the Export Compliance Officer, the PI may proceed with the handling of export-controlled information.

All sections of the TCP must be completed. If there are any questions while completing the TCP, please contact the Export Control Officer in SSP.

Natascha Finnerty, Export Compliance Officer
Sponsored Programs and Procurement
x 6-7557, MS 23
nfinnerty@cfa.harvard.edu

Appendix 6.0.b Description of Technology Export Controls

From Current SAO Export Compliance Web Page Exports and Research Exemptions:

Types of Situations That Are An "Export"

What Requires Export Review?

It is important to know that exporting is not limited to simply transferring a document or piece of equipment to a foreign national. The range of activities that could potentially pose export-control concerns is quite broad. Examples include:

- Disclosure of export-controlled technology including hardware, software, or technical data to a non-U.S. national, by physical, electronic, oral, or visual means, either within or outside of the U.S. Disclosures to U.S. nationals representing foreign interests are not exports unless there is knowledge or reason to know that the technical data will be further disclosed to a foreign party;
- Providing export-controlled items with the knowledge or intent that the items will be shipped, transferred, or transmitted outside of the U.S.;
- Export of ANY item (whether it is export-controlled or not) to a sanctioned country, e.g., Cuba, Iran, North Korea, Sudan, Syria, or other sanctioned country;
- Any transfer of export-controlled technology to a foreign embassy, consulate, or affiliate;
- Donation, sale, or transfer of export-controlled surplus equipment;
- International and domestic collaborations and technical exchange programs that may involve export-controlled topics;
- Written materials containing export-controlled information, e.g., publications, technical reports, memos, letters, trip reports, work notes, etc.;
- Presentation of possible export-controlled topics at domestic and foreign conferences and other public meetings;
- Visits and assignments by non-U.S. nationals to facilities where export-controlled activities take place when the visit/assignment is not related to a public presentation or public tour;
- Foreign travel by Smithsonian employees or affiliated persons when the purpose is related to possible export-controlled projects;
- Specifications that are export controlled which are included in proposals to a sponsor or Requests For Quotations/Proposals that will be viewed by non-U.S. persons; and
- Placement of export-controlled material on the internet, intranet, shared drives, or collaborative sites.

What Does NOT Require Export Review?

- Technical data that is not export-controlled, i.e., fundamental research and information in the public domain;
- Copyrighted material;

- Fundamental Research, per the International Traffic in Arms Regulations (ITAR) or Export Administration Regulations (EAR), as described below;
- Information or an item of an export-controlled nature that is not of U.S. origin AND is not in the U.S. AND was not exported by the Smithsonian to the foreign location;
- Information that is considered to be in the public domain, per the ITAR, as described below; or
- Information publicly available under the EAR.

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 by specific U.S. Government access and dissemination controls, e.g., export control.

Public Domain is data that is NOT controlled under the ITAR or EAR because its intent is to be published and is generally accessible to the public in the following ways:

- Through sales at newsstands and bookstores;
- Through subscriptions that are available without restriction to any individual who desires to obtain or purchase the published information;
- Through second class mailing privileges granted by the U.S. Government;
- At libraries open to the public or from which the public can obtain documents;
- Through patents available at any patent office;
- Through unlimited distribution at a conference, meeting, seminar, trade show or exhibition, generally accessible to the public, in the United States;
- 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 sponsor;
- 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. The Smithsonian has received written notice that our activities qualify as that of an "institution of higher learning" for export-control purposes.

NOTE: The EAR does not control information published on the internet, with the exception of encryption.

Research Exemptions

Technical Data That Is NOT Controlled - Fundamental research and public domain

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.

National Security Decision Directive (NSDD) Memo 189: Department of Defense Memo regarding Fundamental Research

Data that is NOT controlled under the ITAR because its intent is to be published and is generally accessible 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.

Exemption for Collaboration with Non-US Persons at Institutions of Higher Learning

We may collaborate with institutions of higher learning about space research under an ITAR exemption as follows:

125.4 of the ITAR
(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.

NOTE: The Smithsonian has received written notice that our activities qualify as that of an "institution of higher learning" for export-control purposes.

NASA Exemptions

Exemption for NASA Implementing an International Agreement, 125.4 of the ITAR:

> (11) Technical data, including classified information, for which the exporter, pursuant to an arrangement with the Department of Defense, Department of Energy or NASA which requires such exports, has been granted an exemption in writing from the licensing provisions of this part by the Directorate of Defense Trade Controls. Such an exemption will normally be granted only if the arrangement directly implements an international agreement to which the United States is a party and if multiple exports are contemplated. The Directorate of Defense Trade Controls, in consultation with the relevant U.S. Government agencies, will determine whether the interests of the United States Government are best served by expediting exports under an arrangement through an exemption (see also paragraph (b)(3) of this section for a related exemption).

APPENDIX A

ABBREVIATIONS OF EXPORT COMPLIANCE ACRONYMS FOR TECHNOLOGY CONTROL PLAN

Note a full list of definitions in the Export Administration Regulations (EAR) can be found in 15 CR Part 772		
Acronym		
ALMA	Atacama Large Millimeter/submillimeter Array	*Observing Facility in Chile*
ASIAA	Academia Sinica Institute of Astronomy and Astrophysics	*Collaborator of Greenland Telescope*
BIS	Bureau of Industry & Security, Commerce Dept.	*Regulates commercial and dual-use exports.*
CCL	Commerce Control List	*List of commercially available items that require export approval for strategic reasons.*
CDP	Cambridge Discovery Park	*SAO facility*
CF	Computational Facility	
CFR	Code of Federal Regulations	*Numbering system for regulations*
CUI	Controlled Unclassified Information	*Export-controlled information*
(CV)	Curriculum Vitae	
DDTC	Directorate of Defense Trade Controls	*Agency that administers the ITAR and export of defense articles.*
	Deemed export	*The transfer of technical data, files, software or items in the U.S. to a foreign person by visual, oral or electronic means.*
DHS	Dept. of Homeland Security	*An agency that enforces export laws related to shipments and deemed exports.*
DOC	Dept. of Commerce	
DOD	Dept. of Defense	
DOPSR	Department of Defense Office of Prepublication and Security Review	
DOS	Dept. of State	
DPL	Denied Person List	
DSP-5	ITAR license application form	*License application for permanent exports*
EAR	Export Administration Regulations 15 CFR Parts 730 – 774.	
EAR99	(ECCN for No License Required)	*Term for items that are subject to export controls (sanctions) but are not enumerated on the Commerce Control List.*
ECCN	Export Control Classification Number	*Numbering system for controlled items on the Commerce Control List*
ENC	License Exception Encryption	*An encryption license following a classification*

		submitted or analyzed by the encryption producer that grants the exporter rights to export to most countries (not to embargoed countries)
ECMP	Export Compliance Management Program	*Guidelines for what an export compliance program should include*
ECO	Export Compliance Officer	*Title of Export Compliance Authority within SI*
EEI	Electronic Export Information	*Name of electronic filing on the AES system.*
EIN	Employer Identification Number	*For the Smithsonian, including all units, the EIN to be placed on export and import documents is 53-0206027.*
	Export	*(1) An actual shipment or transmission out of the United States, including the sending or taking of an item out of the United States, in any manner; (2) Releasing or otherwise transferring ''technology'' or source code (but not object code) to a foreign person in the United States (a ''deemed export'')*
	Foreign Person	*An individual who is not a U.S. person*
	Fundamental Research (EAR)	*Technology'' or ''software'' that arises during, or results from, fundamental research and is intended to be published is not subject to the EAR.* *Note 1 to paragraph (a) his paragraph does not apply to ''technology'' or ''software'' subject to the EAR that is released to conduct fundamental research (EAR). (See § 734.7(a)(5)(ii) for information released to researchers that is ''published.'') Note 2 to paragraph (a) There are instances in the conduct of research where a researcher, institution or company may decide to restrict or protect the release or publication of ''technology'' or ''software'' contained in research results. Once a decision is made to maintain such ''technology'' or ''software'' as restricted or proprietary, the ''technology'' or ''software,'' if within the scope of § 734.3(a), becomes subject to the EAR.*
GC	General Correspondence	*Communication with the State Dept. to ask a non-binding opinion or obtain authorization without needing a formal license review.*
Group B	List of countries that are eligible for license exceptions under the EAR	
HCO	Harvard College Observatory	
HEAD	High Energy Astrophysics Division	
HTSUS	Harmonized Tariff Schedule of the United States	*10-digit export code recognized world-wide for imports*
ITAR	International Traffic in Arms Regulations (22 CFR Parts 120 – 130)	*Regulations administering the export and temporary import of certain defense articles.*
LMT	Large Millimeter Telescope	
LO	Licensing Officer	

MMT	Multiple Mirror Telescope	
NATO	North Atlantic Treaty Organization	
NDA	Non-Disclosure Agreement	*Sometimes required to provide export-controlled information*
NLR	No License Required	
NSA	National Security Agency	
OCC	Operations Center for Chandra Observatory	
OCIO	Office of Chief Information Officer	
OFAC	Office of Foreign Assets Control	
PI	Principal Investigator	
PISCO	Parallel Imager for Southern Cosmology Observations	
PM	Program Manager	
	SI-Affiliated Person	*This category includes persons with an SAO/SI badge who have undergone a background check who are not employees: contractors, research associates, interns and Fellows, and volunteers.*
SDF	Staff database for SAO	
SI	Smithsonian Institution	
SMA	Submillimeter Array	
SPT	South Pole Telescope	
	Technology	*Specific information necessary for the "development", "production", or "use" of a product. The information takes the form of 'technical data' or 'technical assistance.*
STA	Strategic Trade Area	
THz	Terahertz	
TSR	Technology and Software Restricted	
	US Person	*Person who is a U.S. citizen, permanent resident, individual with either refugee or asylum status.*
USPPI	U.S. Principal Party in Interest	*Party who is control of the export and must file report in AES.*
VLBI	Very Long Baseline Interferometry	