Compliance with Export Controls and Technology Control Plans

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Why Compliance Matters – Risks and Responsibilities

Export Controls are Complex
  ◦ Understanding the Regimes and Agencies we must comply with

What processes we are putting in place at SAO to comply
  ◦ Re-identifying export controlled activities
  ◦ Deemed exports - Obtain licenses
  ◦ Technology Control Plan
There Are Many US Export Rules We Need to Comply with

- TECHNOLOGY CONTROLS on hardware, software, services and technical data
- DENIED PARTIES - We may not sell to listed terrorists, nationals of embargoed countries, or entities involved in Weapons of Mass Destruction (WMD)
- COUNTRY EMBARGOES
- REFUSAL TO PARTICIPATE in Arab League Boycott of Israel
- EXPORT RULES – export clearance
- CUSTOMS - valuation, classification, taxes
We must comply with several regulations and guidelines
- International Traffic in Arms Regulations (ITAR) (State)
- Export Administration Regulations (EAR) (Commerce)
- Foreign Trade Regulations (FTR) (Commerce)
- US Customs requirements (Treasury)
- Foreign Assets Control Regulations (FACR) (Treasury)
- National Industrial Security Program Operating Manual (NISPOM)

Our program is based on “best practice” guidelines issued by the US Departments of State, Commerce and Treasury published on their websites for several years. Fines are mitigated by 50% if you have a compliance program.
Elements of an Export Compliance Program

- Institutional Commitment
- Assignment of Responsibility to Qualified Persons
- Development of SOPS to Ensure Export Licenses Are Obtained and Managed
- Technology Control Plan to Control Deemed Exports
- Provide Training and Keep Updated about Regulations
Agencies that Regulate Controlled Items, Software or Data

**Department of State, Directorate of Defense Trade Controls**
- Regulates defense articles, subassemblies, parts and technology, including spacecraft, satellite-related activities and infrared items

**Department of Commerce**

**Bureau of Industry and Security**
- Regulates “dual use” commercial items, production equipment, software and technology. These are items that have a strategic purpose with respect to national security, foreign policy, missile technology, proliferation, regional stability and crime control

**Bureau of Census**
- Collects trade statistics and manages export clearance for other agencies

**Department of the Treasury, Office of Foreign Assets Controls**
- Issues general and specific licenses for all exchanges and financial transactions with sanctioned countries
The items that are regulated are on the US Munitions List or Commerce Control List:

- Space or ground-based instrumentation mounted on or used in spacecraft, satellites, and data or software related to their propulsion and control systems
- Focal plane arrays and infrared detectors
- Deformable mirrors larger than 1 m, space-qualified adaptive optics
- Radiation hardened electronics, digital signal processors, A-D converters, and recording equipment such as atomic clocks
- Rockets that travel 300 km with a payload of 500 kg
US Dept. of Commerce:
Bureau of Industry and Security

New Commerce Munitions Division
handles licenses for:
New “600 series”
New “500 series”
(License for export of everything else)

2014 Satellites “500 series”

US Dept. of State:
Directorate of Defense Trade Controls
(Licenses for export and temporary import of defense articles)
Positive list for spacecraft and satellites

ITAR parts and Components “600 series”

Less strategic platforms “600 series” spacecraft
Results

- Keep only most **strategic items** on the US Munitions List – make it a positive list
  - Each ITAR category is being reviewed from its broad definitions to being more specific of what will remain
  - Rolling Rollout
- Move **some spacecraft and satellites** back to Commerce Control List
  - but maintain ITAR list of proscribed countries
  - Infrared - still pending
- Move less strategic military items and parts and components to Commerce Control List
  - but maintain ITAR list of proscribed countries
Classification Process at SI

- Develop expertise ITAR and EAR classification in IR, focal plane arrays, satellites, ground and space-based instrumentation
- Create a Classification Committee - Relook
  - Chandra, TEMPO, SWEAP, ARCUS, JWST
- Educate PIs to know what items are on controlled list
- Involve PMs and Purchasing
- Request sponsors to classify their data to new regs
Classification and License Process

**ECO**
Identify research, instruments or data that might be controlled

Look at what remained on Cat XV a

Look at Cat XV e. Is it a payload that is controlled?

**Is it ITAR Controlled?**

Restrict all non-US persons who are not FTEs.

**ECO maintains records**

Meet with DA, PIs. Have eligible non-US persons sign STA license

**Is STA eligible?**

Apply for license for eligible person?

Non-US person signs ITAR NDA. Permit access.

License approved?

Yes

No
Spacecraft, including satellites and space vehicles, whether designated developmental, experimental, research, or scientific, or having a commercial, civil, or military end-use, that:

*(1) Are specially designed to mitigate effects (e.g., scintillation) of or for detection of a nuclear detonation;

*(2) Autonomously track ground, airborne, missile, or space objects in real-time using imaging, infrared, radar, or laser systems;

*(3) Conduct signals intelligence (SIGINT) or measurement and signatures intelligence (MASINT);

*(4) Are specially designed to be used in a constellation or formation that when operated together, in essence or effect, form a virtual satellite (e.g., functioning as if one satellite) with the characteristics or functions of other items in paragraph (a);

*(5) Are anti-satellite or antispacraft (e.g., kinetic, RF, laser, charged particle);

*(6) Have space-to-ground weapons systems (e.g., kinetic or directed energy);
See NASA checklist - #7*(7) Have any of the following electro optical remote sensing capabilities or characteristics:

(i) Electro-optical visible and near infrared (VNIR) (i.e., 400nm to 1,000nm) or infrared (i.e., greater than 1,000nm to 30,000nm) with less than 40 spectral bands and having a clear aperture greater than 0.35 meters;

(ii) Electro-optical hyperspectral with 40 spectral bands or more in the VNIR, short-wavelength infrared (SWIR) (i.e., greater than 1,000nm to 2,500nm) or any combination of the aforementioned and having a Ground Sample Distance (GSD) less than 30 meters;

(iii) Electro-optical hyperspectral with 40 spectral bands or more in the midwavelength infrared (MWIR) (i.e., greater than 2,500nm to 5,500nm) having a narrow spectral bandwidth of DI less than or equal to 20nm full width at half maximum (FWHM) or having a wide spectral bandwidth with DI greater than 20nm FWHM and a GSD less than 200 meters; or

(iv) Electro-optical hyperspectral with 40 spectral bands or more in the longwavelength infrared (LWIR) (i.e., greater than 5,500nm to 30,000nm) having a narrow spectral bandwidth of DI less than or equal to 50nm FWHM or having a wide spectral bandwidth with DI greater than 50nm FWHM and a GSD less than 500 meters;

Note 1 to paragraph (a)(7): Ground Sample Distance (GSD) is measured from a spacecraft’s nadir (i.e., local vertical) position.

Note 2 to paragraph (a)(7): Optical remote sensing spacecraft or satellite spectral bandwidth is the smallest difference in wavelength (i.e., DI) that can be distinguished at full width at half maximum (FWHM) of wavelength l.
Other characteristics

* (8) Have radar remote sensing capabilities or characteristics (e.g., active electronically scanned array (AESA), synthetic aperture radar (SAR), inverse synthetic aperture radar (ISAR), ultra-wideband SAR), except those having a center frequency equal to or greater than 1 GHz but less than or equal to 10 GHz and having a bandwidth less than 300 MHz;

(9) Provide Positioning, Navigation, and Timing (PNT) signals;

Note to paragraph (a)(9): This paragraph does not control a satellite or spacecraft that provides only a differential correction broadcast for the purposes of positioning, navigation, or timing.

(10) Provide space-based logistics, assembly, or servicing of any spacecraft (e.g., refueling) and have integrated propulsion other than that required for attitude control;

(11) [Reserved]

(12) Provide for sub-orbital, Earth orbital, cis-lunar, lunar, deep space (i.e., space beyond lunar orbit), and planetary spaceflight, or in-space human habitation, which have integrated propulsion other than that required for attitude control; or
(b) Ground control systems or training simulators, specially designed for telemetry, tracking, and control (TT&C) of spacecraft in paragraph (a) of this category.

- **Note to paragraph (b):** Parts, components, accessories, attachments, equipment, or systems that are common to ground control systems or training simulators controlled in this paragraph and those that are used for spacecraft not controlled in paragraph (a) of this category are subject to the EAR.
Specially designed for military application, or GPS receiving equipment with any of the following characteristics, and specially designed parts and components therefor:
DEEMED EXPORTS - Many countries are eligible for license exception Strategic Trade Area – must get the non US person to sign an agreement

- Argentina, Europe, Japan, Australia, New Zealand, South Korea
- No “Service” license requirement
- Di Minimis
Example – SWEAP Technology Release Plan

- Need to determine license requirements
  - Spacecraft – ITAR
  - Faraday Cup
  - Solar Probe Analyzers (SPAN)

- Need to inform me of
  - Foreign procurement and services
  - Non-US collaborators that you will be exchanging data so that I can screen in advance
  - Meetings with NASA or APL where ITAR-controlled data will be exchanged
Export License Decisions for Meetings, exports, or procurement

Who is receiving it?
  ◦ We need to check the name against the government denial lists

Where is it going?
  ◦ Is the item going internationally, or to a US possession like Puerto Rico?
  ◦ Make sure the country is not subject to trade restrictions (e.g., Cuba, Iran, North Korea, Sudan and Syria)

Make sure all activities comply with the license conditions
  ◦ Equipment, dollar value, parties involved, return, and reporting to USG.
<table>
<thead>
<tr>
<th>HARDWARE EXPORTS AND DESCRIPTION</th>
<th>RESPONSE</th>
<th>COMMENTS</th>
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<tbody>
<tr>
<td>1. Name of Program</td>
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<tr>
<td>2. PI/PM</td>
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<td>PI/PM email and phone</td>
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<td>3. Date of Planned Export</td>
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<td>4. Date it needs to be there</td>
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<td>5. Type of equipment</td>
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<td>6. Location of equipment now</td>
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<tr>
<td>7. Permanent or Temporary export</td>
<td></td>
<td></td>
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<tr>
<td>8. If temporary, when is it coming back?</td>
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<tr>
<td>9. Has property transfer form been completed?</td>
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<td>10. Controlled under ITAR or EAR?</td>
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<tr>
<td>11. What is ECCN/ITAR Category?</td>
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<tr>
<td>12. Does it need a license? (ECO)</td>
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<td>13. If yes, has license been obtained? (ECO)</td>
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<tr>
<td>14. Check Denied Persons List and country (ECO)</td>
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(sample export checklist)
Next Steps:
TECHNOLOGY CONTROL PLAN
Non-US Person Controls

- Commitment by Institution
- Commodity jurisdiction and classification
- Physical security
- Information security
- Purchasing controls
- Project personnel requirements
Next Steps: Non-US Person Controls

- Have records that ECO has screened all names against denial lists
  - Make it an on-going process – facility officers, Fellowship Coordinator, HR, Procurement, SPP

- Obtain from those who are eligible (from eligible country):
  - Letter of Assurance for Technology and Software Restricted that covers EAR technology
  - ITAR information and services from NASA/APL – must be marked

- Those persons not eligible - Verify that those persons are isolated from
  - Export-controlled activities and lab areas/offices
  - IT Networks that are not approved
  - Be able to prove it
Physical security

- First floor – wear badges
- Do not let unknown persons “piggy back” thru locked doors into labs
- If you do not recognize someone, ask them if they are an SI/SAO Employee
- Must lock the labs if ITAR-controlled equipment is being used or stored.
Commodity jurisdiction and classification

- Each activity needs to be considered and classified
  - Procurement – check if any non-US involvement
  - Services performed overseas
  - Webinars with NASA and APL
We can use an ITAR exemption if

- Our employee or person is a full-time employee of an institute of higher learning, *or*
- He or she a U.S. person (they are permanent resident)
- By request to the DDTC, if the program is multi country where NASA is the sponsor and the exemption will replace many licenses

- Eligible countries (Europe, Canada, Japan, Australia, New Zealand, sometimes South Korea)
Non-Disclosure Agreement – Letter of Assurance

for

Non-US “SAO-Affiliated Person”*

To Permit Access to EAR-Controlled

“Technology and Software Under Restriction” (TSR)

or for

Specific International Traffic in Arms Regulations Export License

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).
Group B Countries

- Egypt
- El Salvador
- Equatorial Guinea
- Eritrea
- Estonia
- Ethiopia
- Fiji
- Finland
- France
- Gabon
- Gambia, The
- Germany
- Ghana
- Greece
- Grenada
- Guatemala
- Guinea
- Guinea-Bissau
- Guyana
- Haiti
- Honduras
- Hong Kong
- Hungary
- Iceland
- India
- Indonesia
- Ireland
- Israel
- Italy
- Jamaica
- Japan
- Jordan
- Kenya
- Kiribati
- Korea, South
- Kosovo
- Kuwait
- Latvia
- Lebanon
- Lesotho
- Liberia
- Lithuania
- Luxembourg
- Macedonia, The
- Former Yugoslav Republic of
- Madagascar
- Malawi
- Malaysia
- Maldives
- Mali
- Malta
- Marshall Islands
- Mauritania
- Mauritius
- Mexico
- Micronesia, Federated States of
- Monaco
- Montenegro
- Morocco
- Mozambique
- Namibia
- Nauru
- Nepal
- Netherlands
- New Zealand
- Nicaragua
- Niger
- Nigeria
- Norway
- Oman
- Pakistan
- Palau
- Panama
- Papua New Guinea
- Paraguay
- Peru
- Philippines
- Poland
- Portugal
- Qatar
- Romania
- Rwanda
- Saint Kitts & Nevis
- Saint Lucia
- Saint Vincent and the Grenadines
- Samoa
- San Marino
- Sao Tome & Principe
- Saudi Arabia
- Senegal
- Serbia
- Seychelles
- Sierra Leone
- Singapore
- Sint Maarten (the Dutch part)
- Slovak Republic (the Republic of)
- Slovenia
- Solomon Islands
- Somalia
- South Africa
- South Sudan
- Spain
- Sri Lanka
- Suriname
- Swaziland
- Sweden
- Switzerland
- Taiwan
- Tanzania
- Thailand
- Timor-Leste
- Togo
- Tonga
- Trinidad & Tobago
- Tunisia
- Turkey
- Tuvalu
- Uganda
- United Arab Emirates
- United Kingdom
- United States
- Uruguay
- Vanuatu
- Vatican City
- Venezuela
- Western Sahara
- Yemen
- Zambia
- Zimbabwe
New – Export Control Reform – Favorable Countries

- Software integration with spacecraft – source code – might be ITAR or “600” series controlled

- Favorable countries for “600 series” spacecraft
  - Canada (no license required)
  - Europe
  - Japan
  - “Down under” - Australia/New Zealand
Facilities Controls: Best Practices

- Control access to EAR/ITAR computer and storage areas - escorted
- Procedures – clean desk, locked offices
- Badges and Sign In
- Labs – dual controls
If SI Research Center Needs a Foreign–National License

I need to include their
  ◦ resume
  ◦ Passport
  ◦ Visa
  ◦ Description of technical data that they require access to.

Records
  ◦ When the license is approved, they need to sign an NDA
Visits by Foreign Scientists

- Check their name against Denial list in advance
- www.mkdenial.com
- Ensure they are escorted at all times
- Keep them off Floors 1 & 3 if not required to be there
- Watch for inappropriate visitor behavior
  - Wandering visitors
  - Questions about topics that are not the scope of their visit, particularly if the research is cutting edge or export-controlled
  - Using photographic or recording equipment
  - Adding unannounced persons at the last minute to a pre-planned visit
Data Controls: Best Practices

- Separate domain for ITAR data
- Encrypted emails/FTP transmissions
- Disclaimer to not have ITAR data in emails
- Track EAR/ITAR data distribution and destruction
- iCloud hosting and Backups – in US
- Mobile device Policy for Laptops and portable drives
“Presentations, Documents, etc. must be marked “EAR - ITAR controlled if they contain technical information which could be used to replicate, design, or build similar hardware / software.

For example, the following would need export control markings:

- Mechanical schematics
- Detailed proposals or statement of work
- Design guides / specs
- Functional diagrams showing a detailed process
- Algorithm descriptions
- Written descriptions of how a change is being implemented, and/or, why we decided to make a change
License Management

- Ensure that the scope and parties are the same
- Stay within the license time-frame – 4 years to 10 years
- Amend the license when facts change
Records and Reporting

- Check license conditions called “Provisos”
- Make sure we comply – sign NDA, keep on file
- Maintain records for 5 years
- Who has access to item/data
- How is it secured?
- Technology Control Plan- must be signed and audited
What if there is a violation?

- Contac the ECO. Will work with OGC to self-disclose, as prescribed in the ITAR or EAR, when appropriate.

- The agency will look for
  - Written procedures
  - Training
  - Follow-up Corrective Action

- Penalties or fines
  - If a license *could* be obtained
  - If it was intentional