

# Compliance with Export Controls and Technology Control Plans

SAO

Nov 10, 2014

Natascha Finnerty  
Export Compliance Officer

# Agenda

---

- ▶ 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
- 
-

# Export Compliance Program

- ▶ **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



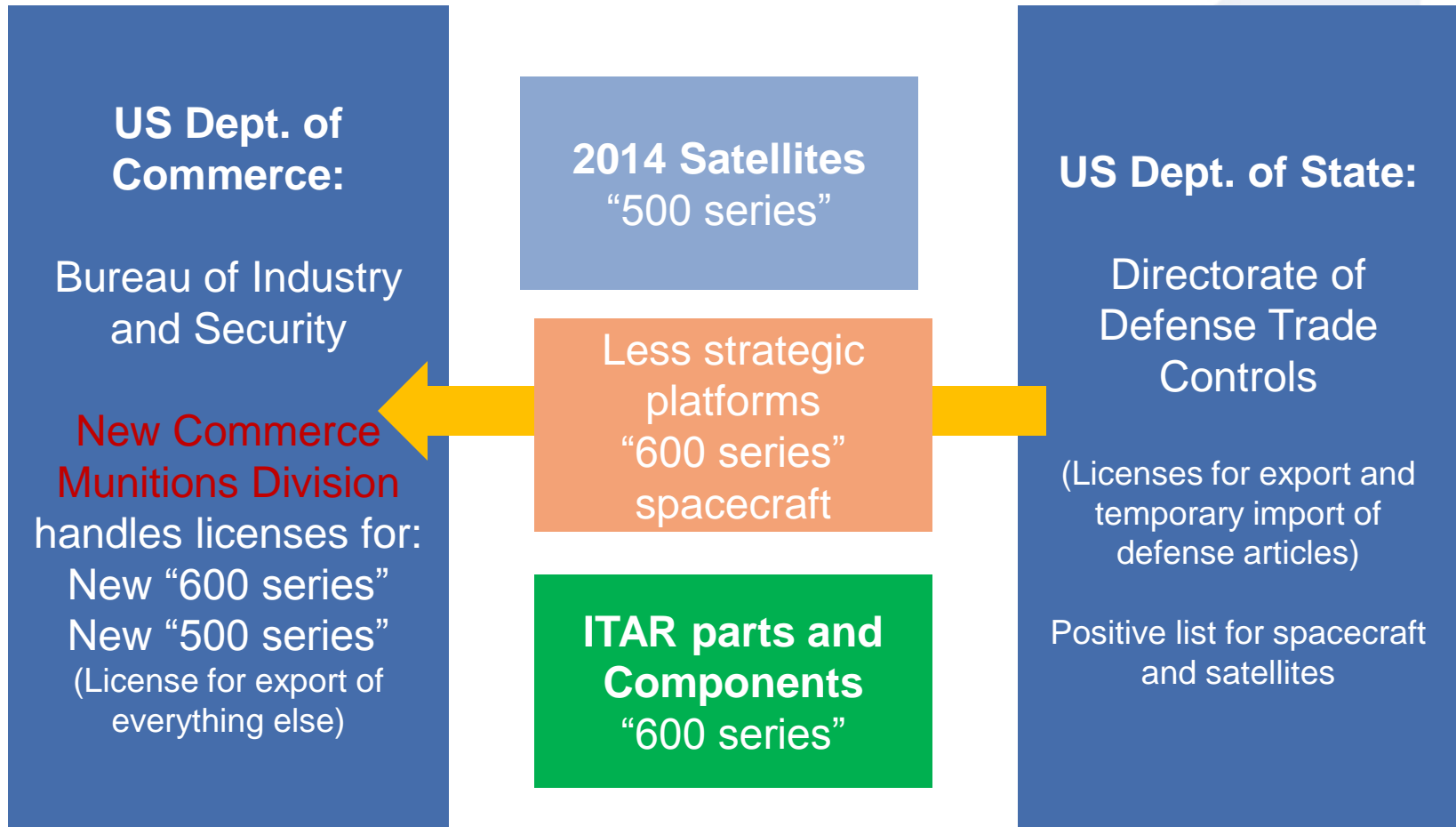
## Department of the Treasury, Office of Foreign Assets Controls

- Issues general and specific licenses for all exchanges and financial transactions with sanctioned countries

# Typical Tangible Items that May Need an Export License

- ▶ 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

# Export Control Reform





# Results

---

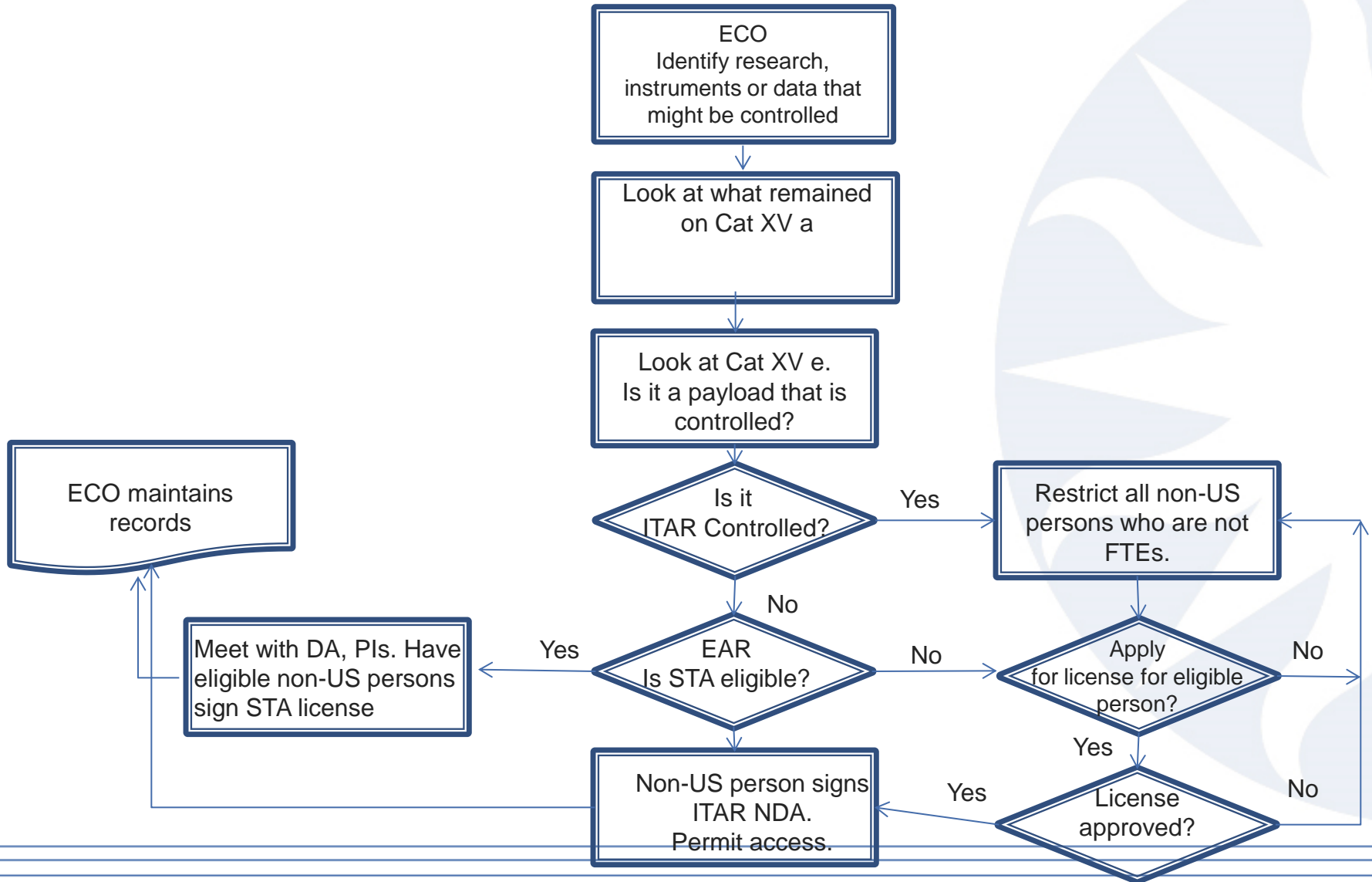
- ▶ Keep only most **strategic items** on the US Munitions List
  - make it a positive list
    - Each ITAR category is being reviewed from its broad definitions to being more specific of what will remain
    - Rolling Rollout
- ▶ Move **some spacecraft and satellites** back to Commerce Control List
  - 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



# Process for Classification

## What is on Cat XV a?

- ▶ *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 antispacecraft (e.g., kinetic, RF, laser, charged particle);
- ▶ \*(6) Have space-to-ground weapons systems (e.g., kinetic or directed energy);

# Cat XV Remote sensing

- ▶ 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  $\lambda$ .

# 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**.*

## (c) Global Positioning System (GPS) receiving equipment

---

Specially designed for military application, or GPS receiving equipment with any of the following characteristics, and specially designed parts and components therefor:



# EAR BENEFITS

---

- ▶ 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.

HARDWARE EXPORTS AND DESCRIPTION	RESPONSE	COMMENTS
1. Name of Program		
2. PI/PM PI/PM email and phone		
3. Date of Planned Export		
4. Date it needs to be there		
5. Type of equipment		
6. Location of equipment now		
7. Permanent or Temporary export		
8. If temporary, when is it coming back?		
9. Has property transfer form been completed?		
10. Controlled under ITAR or EAR?		
11. What is ECCN/ITAR Category?		
12. Does it need a license? (ECO)		
13. If yes, has license been obtained? (ECO)		
14. Check Denied Persons List and country (ECO)		

(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



# Deemed Export

## work with non-US persons in US

---

- ▶ 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

License Exceptions Supplement No. 1 to Part 740-page 3  
Export Administration Regulations Bureau of Industry and Security February 28, 2013  
Country Group B

## Countries

Afghanistan	Egypt	Malta	island of Saint
Albania	El Salvador	Marshall Islands	Martin)
Algeria	Equatorial Guinea	Mauritania	Slovakia
Andorra	Eritrea	Mauritius	Slovenia
Angola	Estonia	Mexico	Solomon Islands
Antigua and	Ethiopia	Micronesia,	Somalia
Barbuda	Fiji	Federated	South Africa
Argentina	Finland	States of	South Sudan,
Aruba	France	Monaco	(Republic of)
Australia	Gabon	Montenegro	Spain
Austria	Gambia, The	Morocco	Sri Lanka
The Bahamas	Germany	Mozambique	Surinam
Bahrain	Ghana	Namibia	Swaziland
Bangladesh	Greece	Nauru	Sweden
Barbados	Grenada	Nepal	Switzerland
Belgium	Guatemala	Netherlands	Taiwan
Belize	Guinea	New Zealand	Tanzania
Benin	Guinea-Bissau	Nicaragua	Thailand
Bhutan	Guyana	Niger	Timor-Leste
Bolivia	Haiti	Nigeria	Togo
Bosnia &	Honduras	Norway	Tonga
Herzegovina	Hong Kong	Oman	Trinidad & Tobago
Botswana	Hungary	Pakistan	Tunisia
Brazil	Iceland	Palau	Turkey
Brunei	India	Panama	Tuvalu
Bulgaria	Indonesia	Papua New Guinea	Uganda
Burkina Faso	Ireland	Paraguay	United Arab
Burundi	Israel	Peru	Emirates
Cameroon	Italy	Philippines	United Kingdom
Canada	Jamaica	Poland	United States
Cape Verde	Japan	Portugal	Uruguay
Central African	Jordan	Qatar	Vanuatu
Republic	Kenya	Romania	Vatican City
Chad	Kiribati	Rwanda	Venezuela
Chile	Korea, South	Saint Kitts & Nevis	Western Sahara
Colombia	Kosovo	Saint Lucia	Yemen
Comoros	Kuwait	Saint Vincent and	Zambia
Congo (Democratic	Latvia	the	Zimbabwe
Republic of the)	Lebanon	Grenadines	
Congo (Republic of	Lesotho	Samoa	
the)	Liberia	San Marino	
Costa Rica	Lithuania	Sao Tome &	
Cote d'Ivoire	Luxembourg	Principe	
Croatia	Macedonia, The	Saudi Arabia	
Curaçao	Former	Senegal	
Cyprus	Yugoslav Republic	Serbia	
Czech Republic	of	Seychelles	
Denmark	Madagascar	Sierra Leone	
Djibouti	Malawi	Singapore	
Dominica	Malaysia	Sint Maarten (the	
Dominican Republic	Maldives	Dutch	
Ecuador	Mali	two-fifths of the	



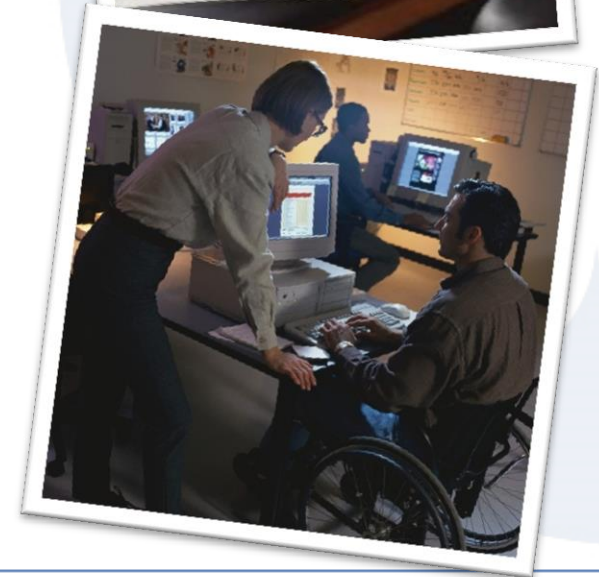
# New – Export Control Reform – Favorable Countries

---

- ▶ 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](http://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





# EAR/ITAR Marking

---

- ▶ “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