Reform of Space-Related ITAR (Category XV)

Export Control Reform: Where are we now and how did we get there?

AUECO Annual Conference on Impact of Export Controls on Higher Education and Scientific Institutions

May 24, 2016

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ITAR Category XV and Space Research and Education at Universities: “The Perfect Storm”

The Three Elements of the Storm

- **Cox Committee Report**—Congress’s mandate casting a broad net that “satellites and related items” be transferred from the Department of Commerce to the State Department and be covered as defense articles under ITAR.

- **Concept of deemed exports**—An export can be “deemed” to have taken place when information is conveyed to a foreign national, including through conversation or classroom teaching.

- **Significant presence of foreign nationals on university campuses**—In space research, university scientists work in teams with colleagues and students, who may be foreign nationals.
ITAR Category XV and Space Research and Education at Universities: “The Perfect Storm”

The Storm Damage—a chilling effect on space-related research and education at U.S. universities

• Professors forced to choose between excluding non-U.S. students from their courses and research projects, or “dumbing down” the curriculum for all students, so that the risk of being accused of transferring technological information is reduced

• Students and able young faculty members avoiding space-related fields, where the uncertainties and burdens of ITAR compliance and the ITAR approval process are acute

• Universities weighing the costs and risks of conducting research and teaching students in disciplines associated with space science and technology, versus opting out and placing investments in non-space-related fields
The Advocacy Effort: Reverse the Cox Mandate

The University Message to Congress

• The impact of ITAR Category XV on university research and education is exacerbating the growing problem of the U.S. having the space workforce needed to design and deploy the space systems of the future
  ➢ Current regulations are harming U.S. national security
• Provide authority to the President to remove satellites and related components from the USML, including scientific research and experimental (SRE) satellites—Reforming current law will allow sensible consideration of what space-related technology must be controlled, as opposed to the current blanket restriction
  ➢ Restore to our universities the ability to teach our students space technology and to conduct research in space in a way that will enable the U.S. to remain a leader in the future
The Advocacy Effort: Reverse the Cox Mandate

USRA, the American Association of Universities (AAU), and industry associations worked together, as single united coalition

- Advocated for broad reform, not limited to commercial satellites
- Undertook joint congressional visits
  - Foreign Relations and Foreign Affairs
  - Armed Services
- Testified before Congress
- Communication with White House agencies:
  - National Security Council
  - National Economic Council
  - Office of Science and Technology Policy
Space-Related ITAR Reform

New Law Passed

- Space-related export control reform was signed into law on January 2, 2013, as part of the NDAA
- Reform not limited to commercial satellites—new law restores to the President authority for “Removal of Satellites and Related Items from the United States Munitions List (USML)”

Subtitle E—Satellites and Related Items

SEC. 1261. REMOVAL OF SATELLITES AND RELATED ITEMS FROM THE UNITED STATES MUNITIONS LIST.

(a) REPEAL.—
(2) CONFORMING AMENDMENT.—Subsection (c) of such section is amended by striking “(1) Subsection (a)” and all that follows through “(2) The amendments” and inserting “The amendments”.

(b) ADDITIONAL DETERMINATION AND REPORT.—Accompanying but separate from the submission to Congress of the first notification after the date of the enactment of this Act under section 38(f) of the Arms Export Control Act (22 U.S.C. 2778(f)) relating to the removal of satellites and related items from the United States Munitions List, the President shall also submit to Congress—
(1) a determination by the President that the removal of such satellites and items from the United States Munitions List is in the national security interests of the United States; and
(2) a report identifying and analyzing any differences between—
(A) the recommendations and draft regulations for controlling the export, re-export, and transfer of such satellites and related items that were submitted in the report to Congress required by section 1248 of the National Defense Authorization Act for Fiscal Year 2010 (Public Law 111–84; 123 Stat. 2546); and
(B) the final regulations under which the export, reexport, and transfer of such satellites
Space-Related ITAR Reform

Regulatory Implementation

• Department of State sought comment on proposed regulations in May 24, 2013 announcement in the Federal Register
  • USRA provided comments on July 8, 2013
  • USRA obtained support of industry associations to include USRA comments within their own comments
• Final regulations published May 13, 2014
  • Regulations became effective November 10, 2014—a 180-day waiting period, after publication, before they could take effect
Has Space-Related Export Control Reform Worked?

Helping Universities Implement New Regulations on Space-Related Export Control

• USRA asked to report on Export Control reform to the NRC “Achieving Science Goals with CubeSats” panel last fall
• Conducted an informal survey of universities with CubeSat programs to help understand the impact of the new regulations
  • Five questions related to knowledge, impact, growth of the field, international impact, and suggestions
  • Reached out to 19 universities and 12 government and industry organizations
  • Complete results available on the NRC Committee site

  http://sites.nationalacademies.org/SSB/CurrentProjects/SSB_160539

• USRA considering a web-based forum that would allow universities to share information on CubeSat programs, including regulatory requirements
Has Space-Related Export Control Reform Worked?

Summary of Responses to Survey

• Nearly all respondents were aware of the EC changes
• The changes were seen as well intentioned and in the right direction, and offering new flexibility for some programs
• However, Export Control requirements remain complicated
• Complexity of the law often results in people following career or program paths of lesser resistance
• There is concern that students are missing opportunities to be exposed to the latest technologies
• The compliance burden is seen by some to hinder science, invention, business and innovation
Has Space-Related Export Control Reform Worked?

Summary of Responses to Survey

• Universities are left with the burden of deciphering the new rules and how they are applied
  – NASA and NSF sponsors do not advise on EC compliance
  – Rigorous application requires EC experts and money
  – Some default to a conservative approach
    • limits student engagement, opportunities
    • no foreign national students allowed on HW or SW
  – Others claim Fundamental Research Exemption
    • may be a risky approach if misapplied
Has Space-Related Export Control Reform Worked?

Respondent Recommendations as Presented to NRC Panel

• Continue review of technologies to further ease restrictions, such as on low rate communications, GPS, small scale ACS, X-ray detectors, electro-optics, focal plane arrays
• Find better ways to return foreign-made parts to the supplier for rework/repair, without an export license
• Consider support for a shared resource that offers universities review assistance for publishing papers, lessons learned, and program advice on EC issues
• Reaffirm the Fundamental Research Exemption
• Special EC sessions/panel discussions at SmallSat conferences
Have the new policies affected your CubeSat program?

“… we are a lot more comfortable integrating international students into the lab and establishing collaboration with international schools. “

“They have simplified our activity, and enabled a broader range of participation. It has also lowered the 'temperature' of our school's Compliance Officer -- with the advent of EAR, I am no longer among the most compliant-needed programs on campus.”

“We have a number of international collaborators on student-built, research-based small satellite missions that will be positively impacted. Additionally, we have several foreign students in our undergraduate and graduate programs that will be able to work directly on spacecraft that do not meet the restriction conditions.”

“Good news that telemetry is no longer ITAR, this is a huge help.”
Has Space-Related Export Control Reform Worked?

Have the new policies affected your CubeSat program?

“... operations have not been significantly affected by the change. ... work that does not fall under the Fundamental Research Exemption (FRE), and therefore export controlled, still maintains the same limitations in terms of foreign national involvement if the technology falls under 9A515. Either with the ITAR or EAR, both regulations require an export license or use of an exemption/exception in order to have foreign nationals involved in any export controlled project to any country except Canada. “

“... I have avoided involvement of foreign nationals or collaboration with foreign entities in our satellite projects from the beginning. The new regulations as they currently stand are not likely to change my approach in that regard; despite the fact that my program and our own US citizen students could in some cases benefit from such interactions.”
Has Space-Related Export Control Reform Worked?

What are the important constraints that will limit international collaborations for CubeSats?

“... the biggest constraints now are related to funding of international collaborations for CubeSats. Funding for CubeSat-based research in general is limited. Funding for international collaboration utilizing CubeSat platforms is almost non-existent. “

“ECCNs, such as 9A515, require the use of an exception or an export license for all countries except for Canada. This means that an export applications still needs to be submitted to Commerce and there is also a 30-60 day timeline for license approvals. This is a constraint in that any international collaboration will require pre-planning and the inclusion of an export control officer to support the collaboration. That said, it is nowhere near as arduous as a TAA. “
Has Space-Related Export Control Reform Worked?

Do you have any advice for changes to ITAR/EAR policies?

“...continued review of the technology under the 9A515 to determine whether certain CubeSat technology can be moved to a lesser controlled ECCN. This would allow certain technology to be exported to countries, such as category B countries, with No License Required (NLR) and would assist international collaborations. “

“Reduce restrictions on low rate communications, GPS receivers, small scale attitude control systems.”

“Suggest special Export Control sessions and panel discussions at the SmallSat conferences and other appropriate venues.”

“There is a need for a shared resource or service for universities for CubeSat or nanosat issues.”
Thank you