



Export Control Awareness

Paul Lauper Ellison

Export/Import Control Compliance Manager

Agenda

- What is an Export?
 - Transferring controlled items to another country, a foreign national, or a foreign institution
- Export Control Restrictions
 - Who? What? Why?
 - Dual-Use Items
 - Fundamental Research Exclusion (FRE)
- Applying Export Controls to Fermilab
- Fermilab's Export Control Policy
- Export Control Roles and Process
 - What is your role in Export Control?
 - Export Control Review of Public Release of Information
- Resources
- Quiz

What is an Export?

- Transferring controlled items:
 - Hardware (e.g., equipment, raw materials, etc.), OR
 - Software, OR
 - Technology
- Verbally, Visually, Physically, or Electronically
- To either:
 - Another country, OR
 - A foreign national (even in the U.S.), OR
 - A foreign institution
- **These activities may require license(s) from the Departments of Commerce, State, or Treasury**

What is an Export?

- For Export Control purposes, there are two categories of people:
 - U.S. Person: a U.S. citizen or lawful permanent resident of the U.S. (i.e., a “green card” holder)
 - Foreign National: Any person who is not a U.S. person. Holders of nonimmigrant visas are treated as foreign nationals
- Releasing, furnishing, showing or disclosing export controlled technical information or source code to a foreign national, even in the US is a “**deemed export**”

What is an Export?

Exporting is **not** just shipping something outside the U.S. It also occurs whenever **controlled** items or technology leaves the U.S. **or** is shared with a foreign national. This includes:

- Visual inspection that reveals design or manufacturing
- Mail/Email/Social media
- Photography/videography
- Uploading code or design data to a website
- Conferences
- Hand-carried items: laptop, flash drives, cell phones, paper
- Talking in detail about software or technical information
- Guidance about the practical application of technology

Who Administers Export Control Laws & Regulations?

- **Department of Commerce** - Export Administration Regulations (EAR), 15 CFR 730-774
 - Controls most dual-use exports
 - Commerce Control List (CCL)
- **Department of State** – International Traffic in Arms Regulations (ITAR), 22 CFR 120-130
 - Controls defense articles and services
 - U.S. Munitions List (USML)
- **Department of Treasury** – 31 CFR 500
 - Administers economic sanctions (embargoes)
- **Department of Energy** – 10 CFR 810
 - Controls unclassified nuclear technology & assistance

Common Export Control Acronyms

- **EAR** Export Administration Regulations
- **ITAR** International Traffic in Arms Regulations
- **BIS** Bureau of Industry & Security (Commerce)
- **DDTC** Directorate of Defense Trade Controls (State)
- **NLR** No License Required
- **ECCN** Export Control Classification Number

What are Some Export Control Restrictions?

- Export Control laws control the export of dual-use and defense items and technology
 - Licenses, exceptions, or exclusions may be available
- Export Control laws also prohibit some transactions with specific countries, entities, and/or individuals
 - *Unless* licensed, excepted, or excluded from restrictions

What's the Risk?

- Former University Of Tennessee Professor John Reece Roth
 - Worked with national laboratories
 - 4 year prison sentence for illegally exporting military research data (2012)
- During course of a contract:
 - Allowed 2 foreign students to access export controlled data and equipment
 - Foreign students took some data to China
- *“This sentence communicates the importance of export compliance to academia and industry, especially in the research and development communities.”*
 - U.S. Attorney William Killian

Why Does the Government Control Exports?

Certain dual-use items and technologies are strategically important for:

- National Security Reasons
- Nuclear Non-Proliferation Reasons
- Missile Technology Controls
- Anti-Terrorism
- Chemical & Biological Controls
- Regional Stability
- Crime Control Measures
- Anti-boycott Reasons
- Economic Sanctions

Dual Use Technology: Export Control Considers Both

Technology that can be used for peaceful & military aims

Technology	Peaceful Use	Military Use
Carbon Fiber	Tennis Rackets	Ballistic Missile Nose Cones
Rocketry	Spaceflight	Missile Propulsion
GPS	Navigation	Guided Weapons Systems

Fermilab Dual Use Technology – Imaging Devices

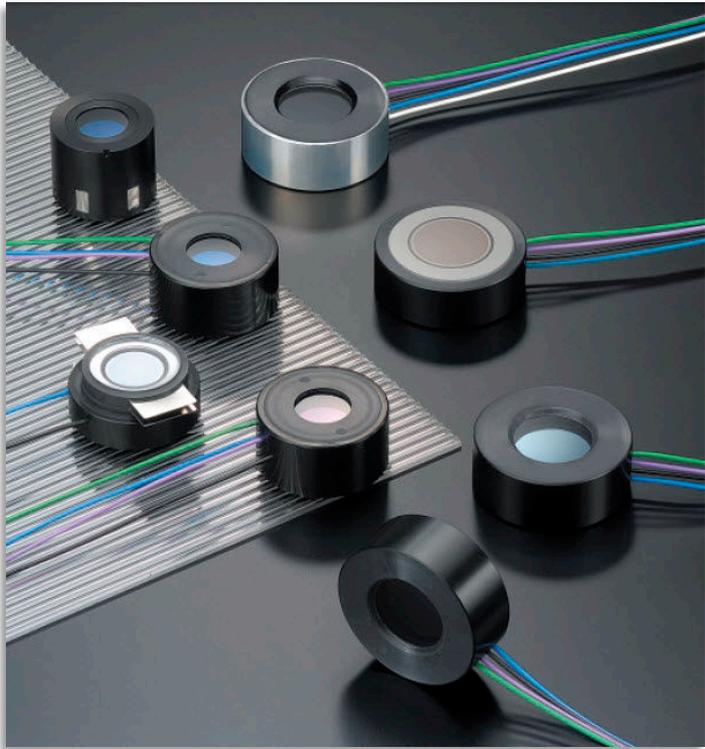


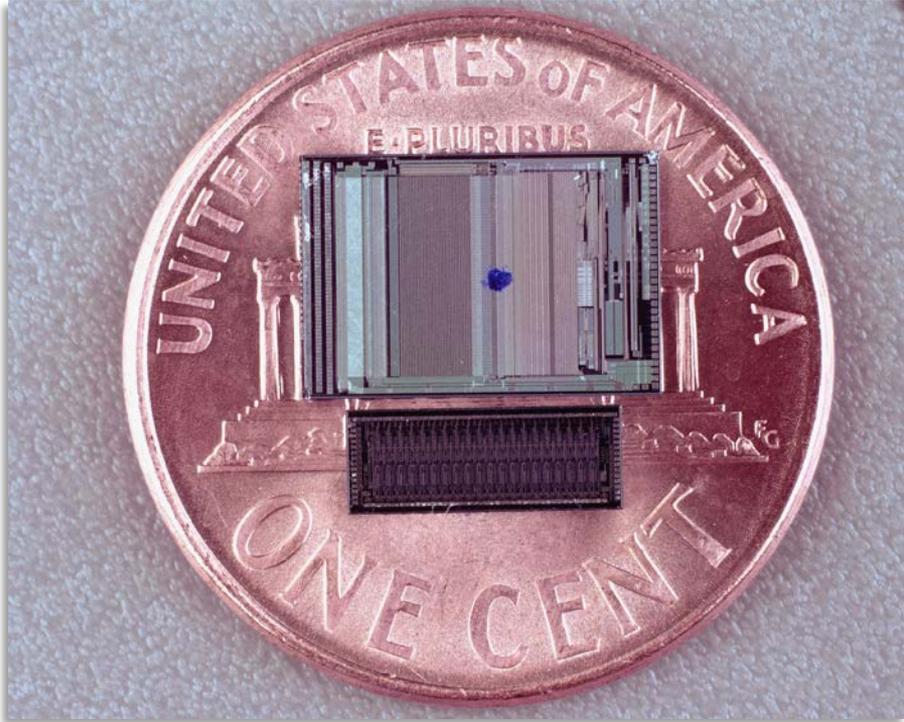
Image Intensifiers



Helmet Mounted Integrated Targeting

Patent Application # 62151535

Fermilab Dual Use Technology – Microchips



Particle Tracking



Electronic Warfare Countermeasure

Fundamental Research Exclusion (FRE)

- FRE exempts **technology** or **software** *resulting from*
 - Basic and applied research*In...*
 - Science and engineering*that is...*
 - Ordinarily **published** and **shared** within scientific community
- **IMPORTANT:** Exclusion applies to information output **only**. **Technology, software and equipment used or accessed during research may be export controlled even if the results will be published.**
- Research restricted for national security reasons is ineligible.

Applying Export Controls to Fermilab

- Export Control is important because of Fermilab's robust international collaboration.
- Fermilab collaborates with:
 - Foreign governments and institutions;
 - Expert foreign nationals from all over the world; and
 - Hosts thousands of users and visitors from hundreds of institutions around the world.
- *More than 35% of our users are from institutions outside USA*
- Isn't Fermilab an open laboratory?
 - Yes, but some items are still subject to export control
 - Some technology is exempted by the Fundamental Research Exclusion (FRE)

Applying Export Controls to Fermilab

- **It's the law** – applies to Federal laboratories
- **Prime Contract Clause I.101C (flow down)**
 - DEAR 970.5225-1
- Consequences of non-compliance
 - Civil penalties (\$250,000 - \$1M per violation)
 - Criminal penalties (fines; **jail for individuals**)
 - Loss of prime contract & negative publicity

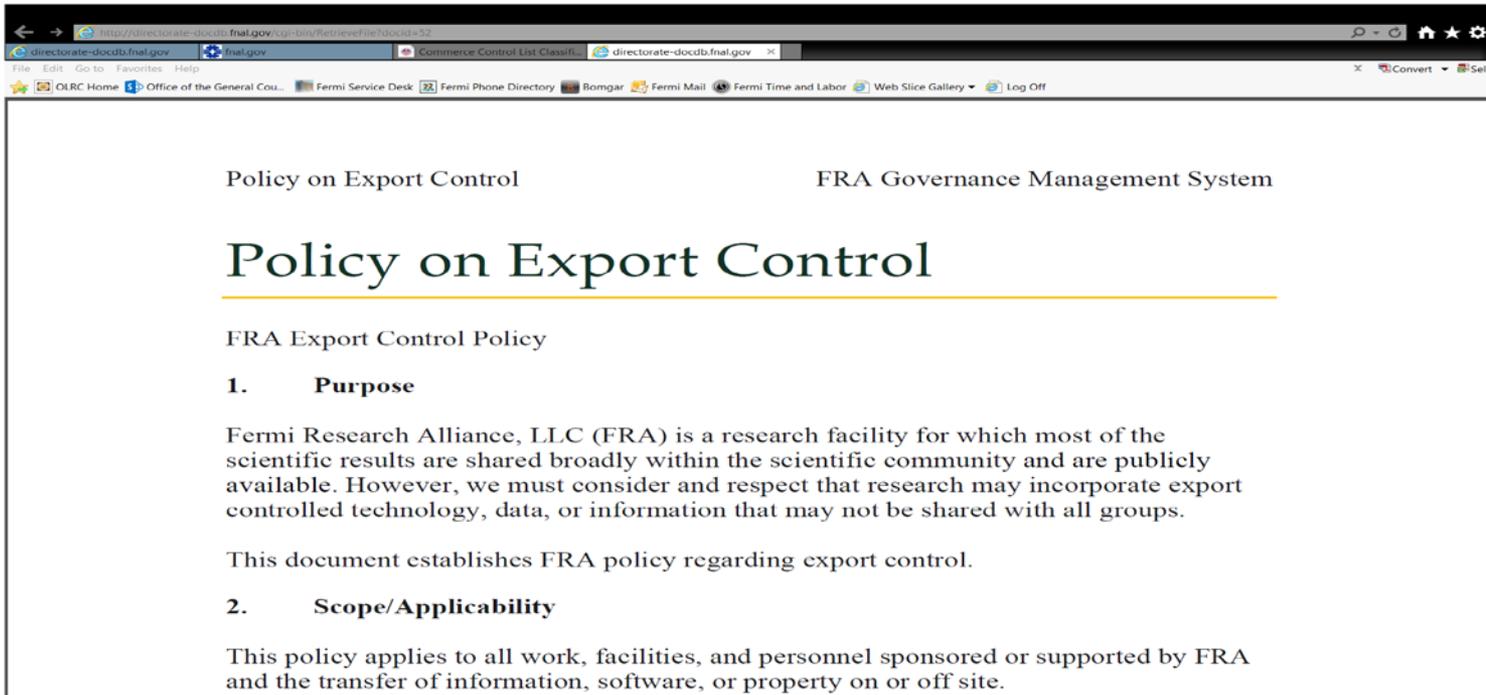
Applying Export Controls to Fermilab

- Research materials and technology may be export controlled
- Procured items may need restrictions on sharing within lab
- Licenses may be needed for foreign students/researchers/visitors participating on a project
- Licenses may be needed to bring items abroad for research
- May not be able to publish all research output

This does not mean that FRA cannot procure an export controlled item or that an international user can't participate. With **advance notice**, licenses or exceptions may be available for controlled items

Fermilab Export Control Policy

- Strict adherence to export control laws and regulations
- Applies to all work, facilities, and personnel and the transfer of information, software, or property on or off site
- [Director's Policy](#) – 12/31/16



The screenshot shows a web browser window with the URL <http://directorat-docdb.fnal.gov/cgi-bin/retrieve?docid=52>. The page content includes:

Policy on Export Control FRA Governance Management System

Policy on Export Control

FRA Export Control Policy

- 1. Purpose**

Fermi Research Alliance, LLC (FRA) is a research facility for which most of the scientific results are shared broadly within the scientific community and are publicly available. However, we must consider and respect that research may incorporate export controlled technology, data, or information that may not be shared with all groups.

This document establishes FRA policy regarding export control.
- 2. Scope/Applicability**

This policy applies to all work, facilities, and personnel sponsored or supported by FRA and the transfer of information, software, or property on or off site.

Policy – Roles & Responsibilities

- Directorate – Ultimate responsibility for compliance
- Division/Section Heads/Managers/Project Leads/Hosts
 - Line management responsibility to engage process/compliance
- Office of General Counsel, Ex/Im Control Compliance Mgr.
 - Analysis, submitting applications, licenses
- Logistics/Property Control Service
 - Proper export and import of items
- Office of Partnerships and Technology Transfer
 - Analysis and review for protected technologies
- WDRS
 - Immigration, visas, and international visits/users

Policy – Roles and Responsibilities (cont'd.)

- Procurement
 - Interface with suppliers/subcontractors
- Office of Communications
 - Tours and photos/videos at Lab
- All Employees
 - Support compliance
 - Engage the export control process and ask questions
 - Report possible ethics and compliance violations using the Fermilab Action Line (x4000)

Export Control Process

- Identify and screen using compliance tools:
 - Foreign Nationals
 - Non-U.S. citizens or non-lawful permanent residents
 - Foreign institution
 - Some subject to controls, even if individual's nationality is not
- Identify technology to be accessed
- Determine if technology is controlled and pre-classified
- Determine if exception or exclusion applies
- Determine if license is required to permit export or deemed export
- Apply for license (may take several months)

Export Control Process

- **Early** engagement of Export/Import Compliance Manager and Export Compliance resources:
 - Better compliance
 - Avoid projects and research delays
- Licenses, exceptions, or exclusions may be available
- Engage the Export Control process and resources:
 - Invitations/recruitment of international visitors/employees/users
 - Procurement planning
 - Project staffing/planning
 - Partnerships planning (CRADAs/SPPS/others)
 - Onboarding international visitors, employees, and users
- Pre-approval may be requested for photography/videos

Tech Pubs & Ex/Im Comp Review

Technical Publications (<https://techpubs.fnal.gov/>) review applies to all materials intended for public release

- Conference report, physics notes, poster, publication, slides, or technical memo, then:
 - 1) Request a publication number: <http://lss.fnal.gov/cgi-bin/getnumber.pl>
 - 2) Include acknowledgment, copyright info, and disclaimer
 - 3) Upload
 - 4) Tech Pubs & Ex/Im Comp review
 - 5) External publication
- Thesis, then just 2 through 5

Tech Pubs & Ex/Im Comp Review

- Information of particular concern:
 - Nuclear-process simulation codes (e.g., Monte Carlo codes)
 - Experiments and projects under proprietary or national security publication restricts
 - Specifications, code, designs, diagrams, instructions, or manuals related to building or repairing technical equipment
 - Emerging technology (e.g., AI, quantum computing, etc.)

Export Control Review of Public Release of Information

- **This process applies to all scientific/technical releases of information for external distribution (public release).**
- Submit information to Technical Publications for Export Control Review prior to public release if your paper, slide, document, poster, notes, presentation, thesis, or other form of information transmission will reveal:
 - Information such as specifications, code, designs, or diagrams related to building technical equipment
 - Information such as instructions, manuals, or code related to operating technical equipment

Export Control Resources

Export/Import Control Compliance:

Paul Lauper Ellison (paule@fnal.gov or x3433)

Office of Partnerships & Technology Transfers:

Aaron Sauers (asauers@fnal.gov or x4432)

Global Services:

Griselda Lopez (griselda@fnal.gov or x6304)

Foreign Visits & Assignments:

Melissa Ormond (mormond@fnal.gov or x5061)

Ethics/Comp Hotline: *Fermilab Action Line* (x4000)