LTI ASSOCIATES

# Export Control Compliance Best Practices for Your Carbon Fiber R&D Program

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**July 26, 2013**

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# Aligned Business Goals and Interests

# Common Goals and Interests

THE COMMON GOAL: Bring companies together and help them to remove the export control barrier in order to enable technology cooperation to increase business opportunities

THE COMMON INTERESTS: Sustainable long-term success through elimination and mitigation of business risks by:

- Establishing secure, reliable, and efficient R&D cooperation and supply chains;
- Implementing comprehensive and detailed planning and programs to safeguard against the negative impact that can result from export control violations; and
- Cooperating to secure approvals that impact R&D cooperation and the supply chain

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# Export Control Overview

# Export Controls: Purpose and Scope

- Laws and regulations implemented by countries around the world, including: China, UK, US, Germany, Switzerland, France, Japan, Korea, and many others;
- Purpose is to prevent the spread of weapons and related sensitive technologies;
- Rules and control lists are developed at the multilateral regimes, which are:
  - The Wassenaar Arrangement: conventional weapons
  - Missile Technology Control Regime: missiles and UAVs
  - Nuclear Suppliers Group: nuclear weapons related items
  - Australia Group: chemical and biological weapons

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# Export Controls: Key Terms

- **Dual-use:** purpose and use is primarily commercial, but may also have important military applications
- **Export:** an actual shipment or transmission of items out of the country. Exports includes physical shipments, as well as electronic transmissions, and even sharing of controlled information by phone or in-person meetings
- **Deemed Export:** Communication of information or "technology" to a foreign national within the United States
  - US Green Card holders are treated as US persons under export controls
- **Technology:** specific information necessary for the "development", "production", or "use" of a product. The information takes the form of "technical data" or "technical assistance".
- **Item:** a commodity, software, or technology.

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# When is a License is Required?

- An export license is typically required when:
  - Commodity: The imported product is on an export control list, either the dual-use or munitions list
- If the product itself is not controlled, the transaction may still require an export license because:
  - Party to Transaction: One of the parties involved in the transaction is listed on an exporting country's "black list" and is viewed as a sensitive party
  - End-Use: The end-use is controlled, e.g. nuclear, missile, or conventional weapons end-use

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# Controlled Technology

- Technology is divided into three parts: “Production,” “design,” and “use” technology, which are defined as follows:
  - Production means all production stages, such as: product engineering, manufacture, integration, assembly, inspection, testing, QA
  - Development is related to all stages prior to production; such as: design, design research, design analysis & concepts, assembly and testing of prototypes.
  - Use of means operation, installation, maintenance, repair, overhaul and refurbishing.

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# Controlled Software

- Software, which is defined as a collection of one or more “programs” or “microprograms” fixed in any tangible meaning of expression,  can be controlled.
- Source code, which is defined as a convenient expression of one or more processes that may be turned by a programming system into equipment executable form code, can also be controlled.
- Software normally does not require a license if it meets the definition for “mass market software,” which is:
  - Designed for installation by the user without further substantial support by the user, and
  - Is sold from stock or retail selling points, without restriction, by means of over the counter transactions, mail order transactions, electronic transactions, or telephone call transactions.

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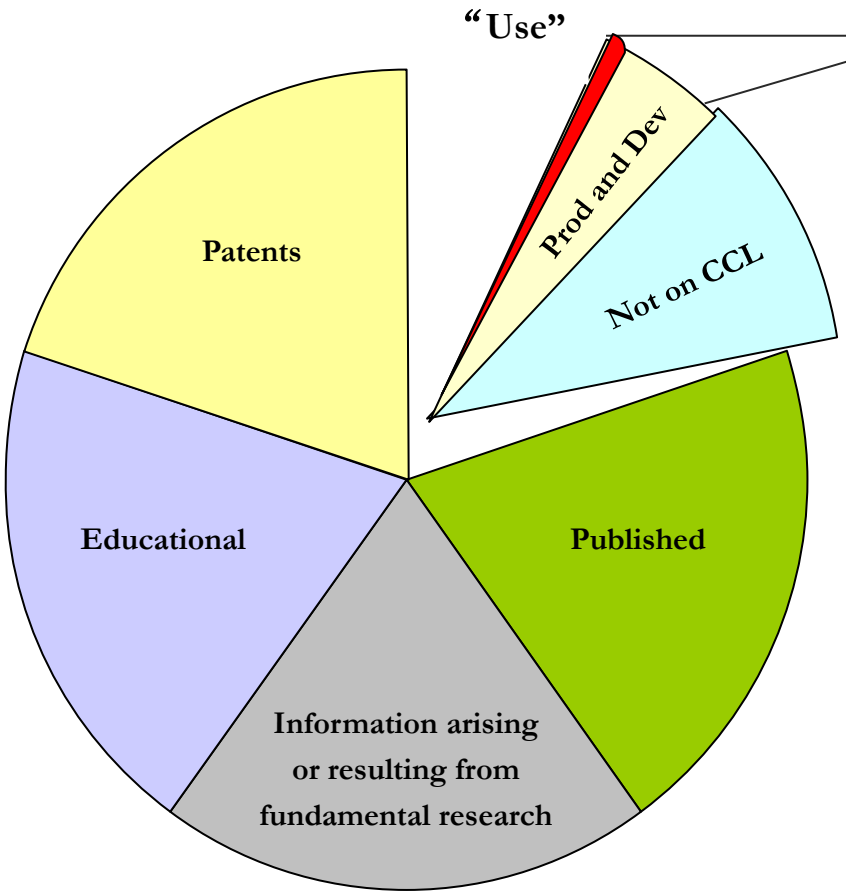
# Public Domain

- Published information and software is “NOT subject to the EAR”
- Technologies which are "publicly available” do not require a license. These include:
  - Technology and software (other than software and technology controlled as encryption items) that are already published or will be published;
  - Technology which arises during or as a result of fundamental research;
  - Technology which is educational; or
  - Technology included in certain patent applications.

# What Technologies are Controlled?

Controlled

Subject to Licensing*




Not controlled

Dual Use Technology

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# Deemed Exports

- A deemed export is the transfer of technology to a foreign national, wherever located.
- The transfer to the foreign national is considered to be an export to the foreign national's country of citizenship.
- The transfer, often called a mind to mind transfer, can be completed in any form of communication whether verbal, written or electronic.
- *Note: Only the United States has deemed export controls.*

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# Key Elements for License Approvals

- To obtain approvals, you need to provide the relevant government authorities with:
  - Information on the items, whether a commodity, software or technology, involved.
  - All parties involved in the transaction
  - Details on the end-use, e.g. base research and development is not enough
  - Assurances that transaction will be carried out as detailed and that there will be no diversions of material to prohibited or restricted end-uses and end-users
  - The keys are to be transparent and to provide sufficient details

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# Consequences of Non-Compliance

- Export compliance violations can result in severe penalties to both the company and involved individuals:
- High fines assessed to the company of up to five time the value of the export or reexports, not to exceeded $1,000,000
- Imprisonment and fines for individuals, up to five years in prison and/or $250,000 in fines.
- Denial of export privileges
- Other consequences include:
  - Disruption to business and supply chain
  - Loss of reputation
  - Loss of government contracts
  - Loss of other existing and future business
  - Even if not found guilty, the investigation alone could cause great harm from negative publicity

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# Carbon Fiber Related Controls

# Classification Number – 1.C.10.b

1.C.10. "Fibrous or filamentary materials" as follows:

b. Carbon "fibrous or filamentary materials", having all of the following:

1. "Specific modulus" exceeding 14.65 x $10^6$ m; and

2. "Specific tensile strength" exceeding 26.82 x $10^4$ m;

*Note 1.C.10.b. does not apply to:*

*a. "Fibrous or filamentary materials", for the repair of "civil aircraft" structures or laminates, having all of the following:*

*1. An area not exceeding 1 $m^2$;*

*2. A length not exceeding 2.5 m; and*

*3. A width exceeding 15 mm.*

*b. Mechanically chopped, milled or cut carbon "fibrous or filamentary materials" 25.0 mm or less in length.*

.

# Classification Number 1.C.10.e

1.C.10. "Fibrous or filamentary materials" as follows:

e. Fully or partially resin-impregnated or pitch-impregnated "fibrous or filamentary materials" (prepregs), metal or carbon-coated "fibrous or filamentary materials" (preforms) or "carbon fibre preforms", having all of the following:

1. Having any of the following:

a. Inorganic "fibrous or filamentary materials" specified by 1.C.10.c.; or

b. Organic or carbon "fibrous or filamentary materials", having all of the following:

1. "Specific modulus" exceeding $10.15 \times 10^6$ m; and

2. "Specific tensile strength" exceeding $17.7 \times 10^4$ m; and

2. Having any of the following:

a. Resin or pitch specified by 1.C.8. or 1.C.9.b.;

b. 'Dynamic Mechanical Analysis glass transition temperature (DMA $T_g$)' equal to or exceeding 453 K (180°C) and having a phenolic resin; or

c. 'Dynamic Mechanical Analysis glass transition temperature (DMA $T_g$)' equal to or exceeding 505 K (232°C) and having a resin or pitch, not specified by 1.C.8. or 1.C.9.b., and not being a phenolic resin;

# Classification Numbers - Exceptions

*Note 1: Metal or carbon-coated "fibrous or filamentary materials" (preforms) or "carbon fibre preforms", not impregnated with resin or pitch, are specified by "fibrous or filamentary materials" in 1.C.10.a., 1.C.10.b. or 1.C.10.c.*

*Note 2: 1.C.10.e. does not apply to:*

a. *Epoxy resin "matrix" impregnated carbon "fibrous or filamentary materials" (prepregs) for the repair of "civil aircraft" structures or laminates, having all of the following;*

   1. *An area not exceeding 1 $m^2$;*

   2. *A length not exceeding 2.5 m; and*

   3. *A width exceeding 15 mm;*

b. *Fully or partially resin-impregnated or pitch-impregnated mechanically chopped, milled or cut carbon "fibrous or filamentary materials" 25.0 mm or less in length when using a resin or pitch other than those specified by 1.C.8. or 1.C.9.b.*

# Classification Number 1C210

1C210 “Fibrous or filamentary materials” or prepregs, other than those controlled by 1C010.a, .b or .e, as follows:

a. Carbon or aramid “fibrous or filamentary materials” having a “specific modulus” of 12.7 x 106 m or greater or a “specific tensile strength” of 235 x 103 m or greater except Aramid “fibrous or filamentary materials” having 0.25 percent or more by weight of an ester based fiber surface modifier;

b. Glass “fibrous or filamentary materials” having a “specific modulus” of 3.18 x 106 m or greater and a “specific tensile strength” of 76.2 x 103 m or greater; or

c. Thermoset resin impregnated continuous “yarns”, “rovings”, “tows” or “tapes” with a width no greater than 15 mm (prepregs), made from carbon or glass “fibrous or filamentary materials” controlled by 1C210.a or .b.

# Classification Numbers – 1.A.2

1.A.2. "Composite" structures or laminates, having any of the following:

a. Consisting of an organic "matrix" and materials specified by 1.C.10.c., 1.C.10.d. or 1.C.10.e.; or

b. Consisting of a metal or carbon "matrix", and any of the following:

1. Carbon "fibrous or filamentary materials" having all of the following:

a. A "specific modulus" exceeding $10.15 \times 10^6$ m; and

b. A "specific tensile strength" exceeding $17.7 \times 10^4$ m; or

2. Materials specified by 1.C.10.c.

# Classification Numbers – 1.B.1

1.B.1. Equipment for the production or inspection of "composite" structures or laminates specified by 1.A.2. or "fibrous or filamentary materials" specified by 1.C.10., as follows, and specially designed components and accessories therefor:

a. Filament winding machines, of which the motions for positioning, wrapping and winding fibres are coordinated and programmed in three or more 'primary servo positioning' axes, specially designed for the manufacture of "composite" structures or laminates, from "fibrous or filamentary materials";

b. Tape-laying machines, of which the motions for positioning and laying tape or sheets are coordinated and programmed in five or more 'primary servo positioning' axes, specially designed for the manufacture of "composite" airframe or missile structures;

c. Multidirectional, multidimensional weaving machines or interlacing machines, including adapters and modification kits, specially designed or modified for weaving, interlacing or braiding fibres for "composite" structures;

*Technical Note*: *For the purposes of 1.B.1.c., the technique of interlacing includes knitting.*

# Classification Numbers – 1.C.8

1.C.8. Non-fluorinated polymeric substances as follows:

a. Imides as follows:

1. Bismaleimides;

2. Aromatic polyamide-imides (PAI) having a 'glass transition temperature (Tg)' exceeding 563 K (290°C);

3. Aromatic polyimides;

4. Aromatic polyetherimides having a 'glass transition temperature (Tg)' exceeding 563 K (290° C);

# Classification Numbers – 1.C.9

1.C.9. Unprocessed fluorinated compounds as follows:

a. Copolymers of vinylidene fluoride having 75% or more beta crystalline structure without stretching;

b. Fluorinated polyimides containing 10% by weight or more of combined fluorine;

c. Fluorinated phosphazene elastomers containing 30% by weight or more of combined fluorine.

# Classification Numbers – 1.D

1.D SOFTWARE

1. "Software" specially designed or modified for the "development", "production" or "use" of equipment specified by 1.B
2. "Software" for the "development" of organic "matrix", metal "matrix" or carbon "matrix" laminates or "composites“
3. "Software" specially designed or modified to enable equipment to perform the functions of equipment specified by 1.A.4.c. or 1.A.4.d.

# Classification Numbers – 1.E

1.E.1 "Technology" according to the General Technology Note for the "development" or "production" of equipment or materials specified by 1.A.1.b., 1.A.1.c., 1.A.2. to 1.A.5., 1.A.6.b., 1.A.7., 1.B. or 1.C.

1.E.2.c.2 Non-"composite" ceramic materials composed of the materials specified by 1.E.2.c.1.

*Note: 1.E.2.c.2. does not apply to technology for the design or production of abrasives.*

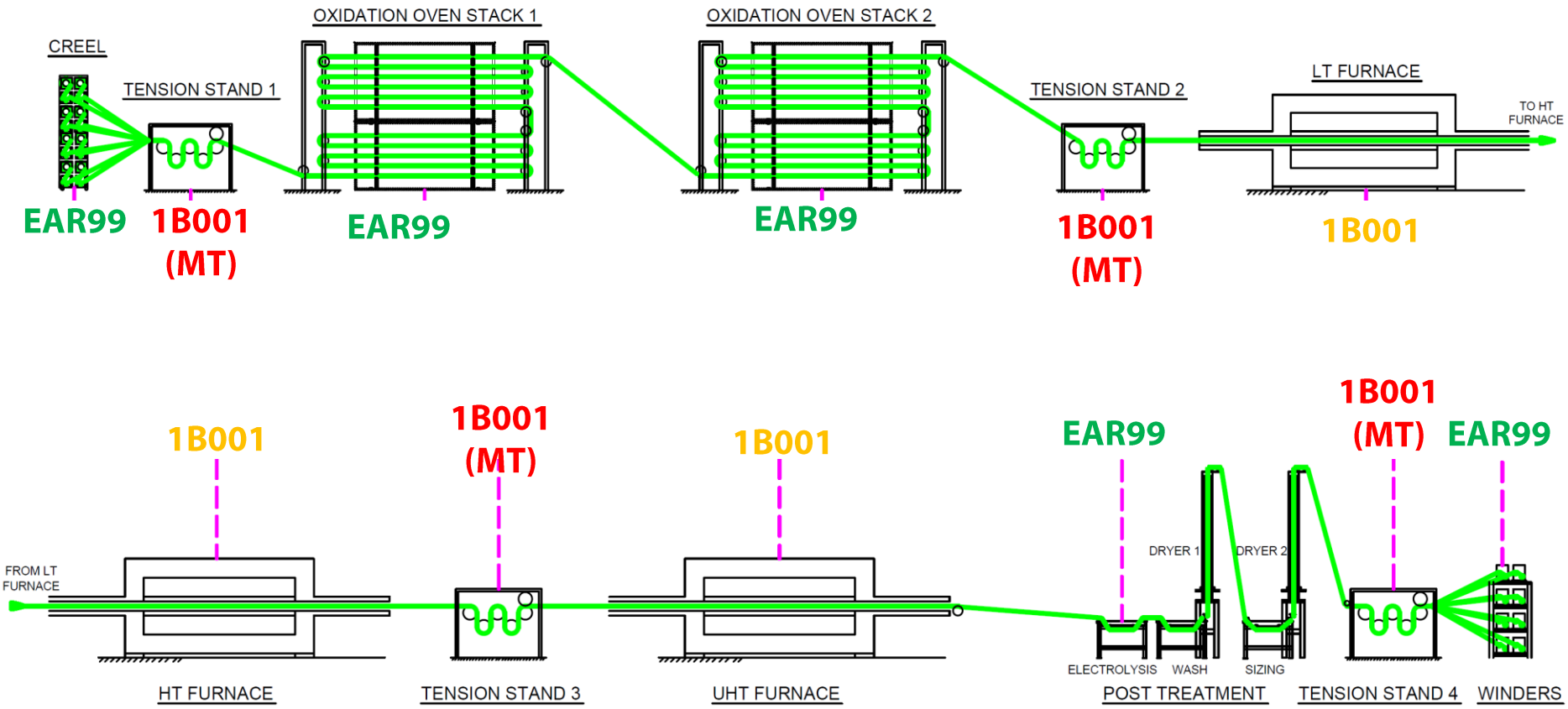
1.E.2.d "Technology" for the "production" of aromatic polyamide fibres;

1.E.2.e. "Technology" for the installation, maintenance or repair of materials specified by 1.C.1.;

1.E.2.f "Technology" for the repair of "composite" structures, laminates or materials specified by 1.A.2., 1.C.7.c. or 1.C.7.d.;

*Note 1.E.2.f. does not apply to "technology" for the repair of "civil aircraft" structures using carbon "fibrous or filamentary materials" and epoxy resins, contained in aircraft manufacturers' manuals.*

# Carbon Fiber Equipment

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# Enabling Technology Cooperation Through Compliance

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# Means for Success

- Successful cases result in “win-win” for cooperation in technology and product development or manufacture
- These cases demonstrate the following characteristics:
  - Cooperative and transparent partners
  - Deep understanding of what is controlled for export
  - Embracement of export control compliance through demonstration of civil-only commitments
  - Direct engagement with Government officials
  - Build in sufficient time to obtain approvals

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# Transparency and Cooperation

- Gather as much detail from the recipient of the controlled Items and the use of the Item as possible, to include:
  - Overview of recipient, e.g. where registered, HQ and manufacturing location, size of the company; company mission; and corporate structure, including key departments and officers of the entity and nationality of key employees.
  - Details on how item will be used.
  - Are their technical fixes available to ensure item will only be used stated end-use.
  - Details on commercial market demand
  - Details on existing and targeted customers or customer types
  - Do all parties to the transaction understand export compliance

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# Partners on Same Page

- Both partners need to:
  - Understand the regulations, requirements and controls
  - Understand any special license conditions
  - Understand end-use restrictions
  - Understand diversion concerns
  - Be committed to the implementation of a robust compliance program

# Commitment to Compliance

- How the Partnership will jointly ensure Export Compliance, in particular:
  - Demonstrating leadership support through establishing compliance policies and the allocation of resources;
  - Agreeing to a policy of no transactions to prohibited and restricted parties;
  - Agreeing to a policy against military (if applicable) and prohibited end-uses;
  - Joint development of procedures to protect access to controlled components, sub-assemblies and parts and technology, e.g. physical security, signing of non-disclosure agreements; and IT security measures;
  - Jointly working to screen employees for export compliance purposes;
  - Joint export compliance training;

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# Compliance Benefits

- Assist suppliers in getting license approvals for export controlled items
- Prevent disruption of business due to licensing delays
- Build sustainable long-term relationships with suppliers, partners and customers
- Focus on viable business opportunities
- Facilitate dealing with import and export regulatory requirements globally
- Protect intellectual property and key technologies
- Help meet higher quality standards, benefiting certification processes
- Increase eligibility for government contracts
- Maintain and enhance global reputation
- Prevent severe penalties for non-compliance for both company and individuals (including high fines and imprisonment)

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# Checklist

| Factors | Yes | No |
|---|---|---|
| Classification | | |
| a. Military (ITAR) | | |
| a. Dual-Use | | |
| a. Classification (ECCN) | | |
| End-Use | | |
| a. Commercial Only | | |
| a. Commercial and Military | | |
| a. Military Only | | |
| End-User | | |
| a. Exclusive Background in Civil Work | | |
| a. Background in Civil and Military Work | | |
| a. Primarily Military Background | | |
| Additional Positive Items | | |
| a. Previous On-Site Reviews – Pre-License | | |
| a. Previous On-Site Review – Post | | |
| a. Relationship with U.S. Government | | |
| a. Relationship with U.S. Companies | | |
| a. Relationship with Foreign Companies | | |
| Internal Compliance Program – Showing Commitment | | |
| a. Financial Commitment | | |
| a. HR Commitment | | |
| a. Screening Capabilities | | |
| a. Audit Capabilities | | |
| a. Reporting Capabilities | | |

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# Risks:
# Delays, Denials, and Violations

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# Risks of Delays

License processing can be delayed by:

- Insufficient information in the original application；
- Changes in the details of the transactions or parties involved；
- Slow responses to questions from the government

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# Risks of Denials

- License applications may be at risk of denial if:
  - Parties involved are highly sensitive, for example:
    - Have a reportedly bad licensing history as an end-user
    - Have diverted controlled items in the past
    - Are not transparent or cooperative with government officials
    - Are listed on prohibited or restricted lists
  - Insufficiently detailed information provided
  - The government has concerns or reason to believe that the controlled products may be diverted to:
    - Military aircraft or other military end-uses, in some cases
    - Other parties that are not listed on the export license
    - Embargoed countries or prohibited parties

# Risks of Violations

- Exports of dual-use items, whether a license is required or not, have conditions that must be met
- You need to understand those conditions and make sure you put in processes to meet those requirements
- If there are changes to the transaction, including end-use and parties involved, you need to again review the export control impact
- Violations of export controls can lead to administrative and criminal fines, prison terms and being banned from exporting and/or receiving controlled dual-use items.

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# Working Together to Mitigate Risks

# Expediting Export Licenses and Preventing Violations

- Steps that can shorten time to obtain license approvals and prevent violations:
  - Be cooperative and transparent in supplying end-use information
  - Provide a complete list of all parties involved in handling, storing, moving, and using the controlled items
  - Avoiding changing the parties above; if unavoidable, notify the exporter immediately
  - Demonstrate commitment to use products for of civil end-use only
  - Develop and implement an internal compliance program to protect controlled products
  - Work with exporter to directly and openly engage with Government officials

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# Thank You & Questions

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