

## **Security Trade Control Guidelines for Researchers (Concise Version)**

Japan Society for Intellectual Production

This is a concise version of the “Security Trade Control Guidelines for Researchers”. These guidelines were created for university personnel who may have to deal with the security-related trade controls in the course of their work, including faculty members engaged in research and clerical staff, in order to facilitate understanding of how export controls can apply to research-related exports. The Japan Society for Intellectual Production revised these guidelines in March 2011 in cooperation with relevant government agencies to reflect revisions that were made to the Foreign Exchange and Foreign Trade Act (hereinafter, “Foreign Exchange Act”) in April 2009.

### **1. Academic Research and Security Trade Controls**

The Foreign Exchange Act was created not only to control economic transactions between Japan and other countries, but also to ensure “the maintenance of peace and security in Japan and in the international community”. The security-related trade controls implemented under this Act cover a wide range of transactions, including the export of materials and equipment (referred to in the Act, and hereinafter, as “goods” ) that could potentially be used in the production or development of weapons, as well as the international transfer of technology that could be used for that same purpose (referred to in the Act as “provision of services”). **Under the provisions of the Foreign Exchange Act, activities related to international student exchange programs that could fall subject to security-related trade controls include the export of research equipment, chemical substances, and microorganisms; sponsored research or collaborative research involving foreign governments or overseas companies; technical guidance to companies based overseas; and the acceptance of foreign researchers and international students.**

Nowadays, there is no research field in the sciences that is completely devoid of any connection to military technology. Given the recent trend toward interdisciplinary research, **what is of most concern is the possibility that research-related goods that have left Japan’s borders without being picked up as a security threat could end up contributing to the development, production or operation of weapons of mass destruction (hereinafter, “WMDs”) or conventional weapons.** It may happen that, having failed to find out enough information about the person’s home university and background, a university could unknowingly accept an international researcher or student who is connected to one of the foreign institutions that are subject to heightened trade controls. If the international researcher or student thereby gains access to a dual-use technology, it could pose a threat to Japan’s national security and also undermine the trust that the international community places in our country. This is why universities that are actively engaged in international exchange programs are required to implement measures to ensure that security-related trade controls are correctly applied. **Research fields in science and engineering that are particularly likely to fall subject to export controls include nuclear science, aerospace, chemistry, biology, precision engineering (including control engineering, electronic engineering and mechanical engineering), and information engineering (including communication engineering and software engineering).** However, there are, needless to say, other research fields that may also

be subject to controls.

## **2. Research fields, such as those that can be linked to WMDs, where controls are likely to apply**

**The primary purpose of security-related export controls is to control the transnational movement of conventional weapons and WMDs.** All countries that participate in international trade-control agreements have in place their own legislation to implement these controls. Goods that are subject to international control include general-purpose items for civilian use (for example, golf clubs), as well as materials that could be used to build weapons, such as the carbon fibers used in the construction of missiles. The export of these goods should therefore be undertaken with great caution.

Specific items that are subject to controls under Japan's trade control laws are **listed in a Ministerial Ordinance of the Ministry of Economy, Trade and Industry (METI)**. The Foreign Exchange Act requires that a license be granted by METI before any research-related goods that fall under any of the categories on this list are exported, or before any technology that could be used in the design, production or operation of these goods is transferred internationally (for the purpose of conducting international collaborative research, providing technical assistance, granting internships, etc.). These controls that are imposed on particular categories of goods and technology are referred to as "**list controls**". But even where the general-purpose item or technology in question are not found to match the technical specifications stated on the control lists, depending on the country of the end-user, other controls may apply, and exporters may be required to investigate the proposed end-user and end-use. **If that investigation uncovers any possibility that the export could be diverted to weapons programs, the exporter will be required to apply for an export license.** These additional controls include WMD catch-all controls and complementary export controls for conventional weapons, and shall hereinafter be referred to **collectively as "catch-all controls"**.<sup>1</sup>

- 1) For details of list controls and catch-all controls, please visit METI's Security Trade Control Policy Division website, at <http://www.meti.go.jp/policy/anpo/index.html>.

It is important to note that **security-related trade controls under the Foreign Exchange Act do not prohibit the export of controlled items: they simply require the exporter to obtain a license before exporting these items.** The fact that a license is required in order to export certain goods or technology should not deter exporters from trying to send the item in question to an overseas university or company. In fact, exports of goods and technology for research-related purposes are actually unlikely to be forbidden on the grounds of security.

Universities in Japan do not conduct research directly related to WMDs. Having said that, **some research conducted in Japan may involve the handling of goods on the control lists that could potentially form part of, or be used to manufacture, WMDs, or the technology used to design, produce and operate WMDs.** Here are some examples of such fields of research:

(i) Nuclear Power:

Research on the excitation scheme of <sup>235</sup>U using dye laser beams; Research on dry reprocessing using metal electrolysis process of spent metal fuel; Research on the nuclear properties of hafnium, etc.

(ii) Aerospace:

Research on methods of producing carbon fiber-reinforced carbon (C/C composite);  
Research into the design of flying objects built with carbon-fiber-reinforced resin (CFRP) composite and the production of their prototypes, etc.

(iii) Chemistry

It is not easy to isolate specific examples of research subjects in the field of chemistry that have the potential to be diverted into chemical weapons research. Having said that, we can mention research involving the use, or generation as a by-product, of certain chemical substances that can also be used in the production of chemical weapons.

(iv) Biology

Research on Bacillus anthracis, Research on botulin toxin, etc.

**Control lists also cover conventional weapons.** Examples of research subjects linked to conventional weapons that are subject to export control include research on high-resolution infra-red imaging systems, and research on high-performance piezo-ceramic oscillators used for sonar.

### **3. Cases where the proposed end-user and end-use of goods or technology is subject to advance screening**

**Depending on the country of destination, there are some cases where, even if the goods to be exported, or the technology to be transferred, are not included on the control lists, catch-all controls apply and the exporter is required to obtain a license before going through with the export or transfer. Catch-all controls apply when the proposed end-user or end-use of the export may be implicated in the development, production or operation of weapons.** Catch-all controls only apply to exports to countries that are not so-called “white countries”: that is, that do not enforce strict export controls.<sup>2</sup> **You can therefore easily find out whether catch-all controls will apply by checking whether the proposed end-user is in one of the “white countries”.**

Note 2) Check this webpage to see the list of “white countries”:

<http://www.meti.go.jp/policy/anpo/kanri/catch-all/bepyou dai3nokuni.htm>

METI has also provided a list of 40 general-purpose items that are not on the control lists but that are of particular concern due to their potential use in the development, manufacture and operation of WMDs. In addition, Item (i), Section 16, Appendix 1 of the Export Trade Control Ordinance lists 32 items that could be used in the production of conventional weapons (see the METI Security Trade Control Policy Division site). **Under catch-all controls, even if the goods in question are not identified on the control lists, if they are being transferred to a country other than one of the “white countries”, the proposed end-user and end-use of the exported items will be subject to thorough screening.** Here are some examples of research areas, and related items, that may be subject to controls:

- (i) Research on precise velocity control of synchronous induction electric motors; Research on measures against deviated interphase load variation in three-phase AC transmission. Related items: Frequency changers.
- (ii) Research on vehicle suspension systems; Research on the mechanical properties of anti-vibration rubber (or elastomer); Research on packaging technology for electronic

components. Related items: Vibration test equipment.

- (iii) Research on reduction of residual stress in molding carbon-fiber-reinforced resin composite (CFRP) thin plates; Research on technology for fabricating CFRP plates (in particular, bonding techniques); Research on technology for carbon fiber production and development of carbon-fiber spinning and weaving technology. Related item: Composite material incorporating carbon fibers.
- (iv) Research on attitude control (artificial semicircular canals) in humanoid robots; Research on anti-skid mechanisms for vehicles; Research on stand-alone car navigation systems. Related item: Gyroscopes.

**METI has also provided a “Foreign End-User List”<sup>3</sup>, which lists foreign institutions that are suspected of being involved in the development, production and operation of WMDs** (see the METI Security Trade Control Policy Division website). Unless it is clear that the goods or technology in question will not be used in the development of WMDs, anyone wishing to conduct research with any of these institutions, or wishing to provide them with goods or technology, is first required to obtain a license from METI. **This list names particular universities and research institutions**, and caution is required when providing goods or technology to researchers or international students who are affiliated with one of these institutions. The Foreign End-User List is occasionally revised to reflect the evolving situation in Japan and overseas, and universities in Japan are expected to keep up-to-date with the latest information.

3) You can consult the Foreign End-User List here:

<http://www.meti.go.jp/policy/anpo/law05.html#gaikokuuserlist>

#### **4. Steps exporters should take when they think an item may be subject to export control**

When a researcher is preparing to export research-related goods or technology to a foreign institution, **it is the university to which that researcher belongs that has the primary legal responsibility to determinate whether or not it is necessary to apply for a license**. First, a faculty member who is actually involved in the research (hereinafter, “you”) needs to check whether or not the goods or service to be provided fall subject to export control legislation, which can be done by consulting the **“Goods and Technology Matrix” (the Excel version has a search function) that can be accessed via METI’s Security Trade Control Policy Division website (see Note 1)**. If you can access it, the **“Reference Classification for Applicability Judgment (Compass)”**, available on the old version of the website, is another resource that can help you determine whether controls may apply, although you should be aware that this list does not incorporate recent revisions to the Order and Ministerial Ordinances. If, having consulted these resources, you determine that your export is likely to be subject to export control legislation, you will need to take the following steps.

If the institution to which you belong has implemented an effective security trade control support system, the first step is to seek advice from the university office that is in charge of export control. When seeking advice, you should be prepared to provide detailed information including the proposed end-user’s name, country and primary field of work, and to account for how the end-user will use the goods or technology in question. You should also follow any institutional export-control approval procedures that your institution has in place. The office in charge of export control will carefully review the information you have provided to determine whether or not the proposed export or transfer is subject to export-control legislation. If they find that it is, you

will be required to apply to METI for a license. Whether or not a license can be granted will be determined according to the following criteria:

- (i) Whether it is probable that the goods or technology will actually reach the proposed end-user
- (ii) Whether it is probable that the end-user identified in the application will be the one to actually use the goods or technology provided
- (iii) Whether it is probable that the goods or technology provided, as well as any goods to be produced using the technology provided, will be used in a way that could pose a threat to international peace and security
- (iv) Whether it is probable that the goods or technology provided will be managed properly by the end-user

If, on the other hand, **your university or institution does NOT have an effective security trade control support system in place**, you should first consult with the university office in charge of research support or social collaboration. In general, any proposed transfer of university equipment needs to be authorized by the university office in charge of supplies and property management (or financial affairs). You should therefore discuss details of your plans with this office, and find out what authorization procedures your university has in place regarding security trade control exports under the Foreign Exchange Act. **Above all, it is vital that you thoroughly review the specifications of the goods or technology to be exported to find out which legislation applies.** To do so, you can, as mentioned above, consult the “Goods and Technology Matrix”, as well as the “Compass” resource that is available on METI’s Security Trade Control Policy Division website (the old version).

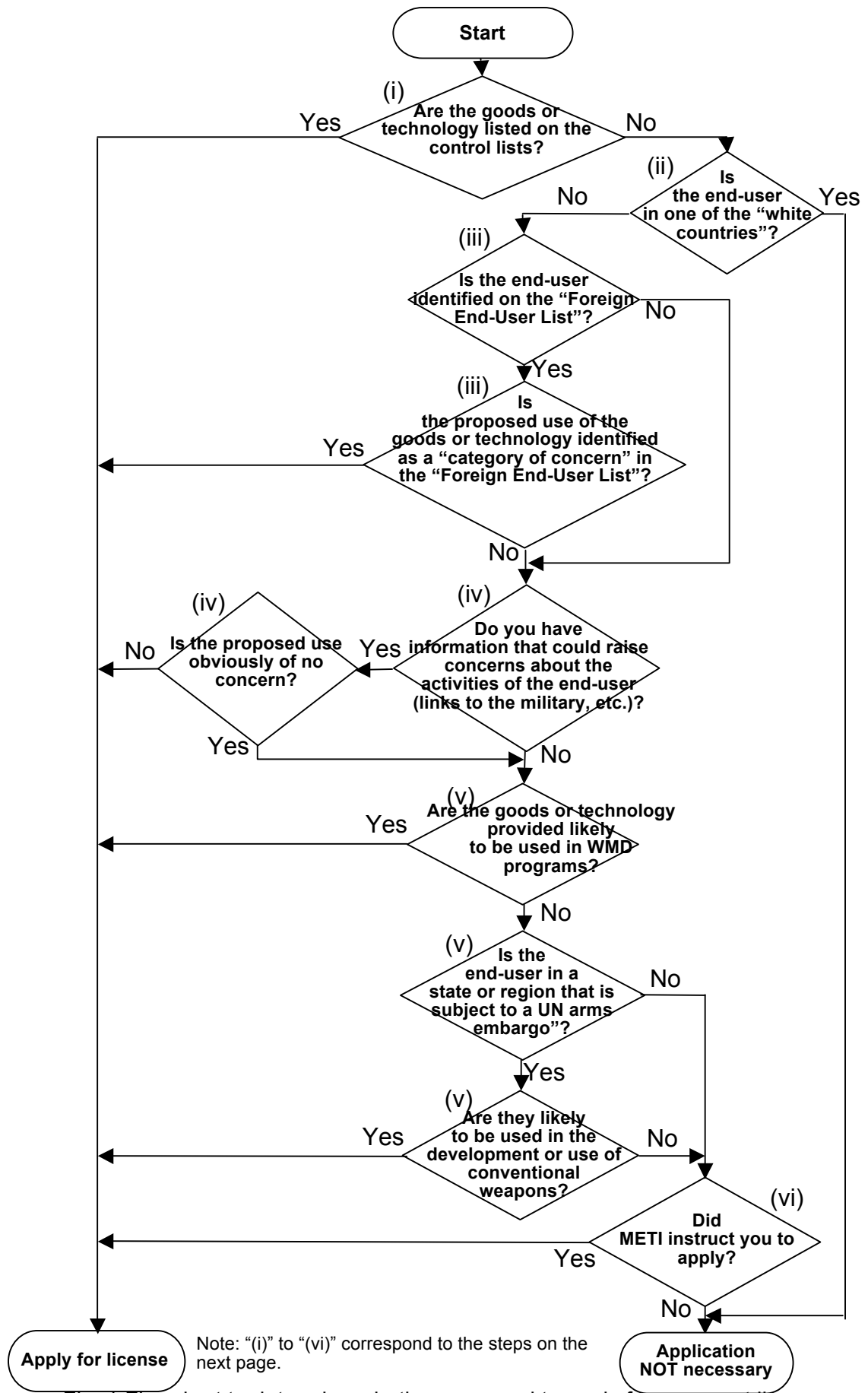


Fig. 1 Flowchart to determine whether you need to apply for an export license.

The flowchart in Figure 1 shows the steps you should take to determine whether or not you are required to apply for an export license. Simply follow the steps in the order written below to make a quick and accurate judgment:

- (i) **Check if the goods or technology in question are listed on the control lists.** If yes, unless your export is subject to an exemption, you will need to apply for a license.
- (ii) **If not, check if the end-user's address (domicile) is in one of the "white countries".** If it is, you don't need to apply for a license.
- (iii) **If your export is not listed on the control lists, but the end-user's address (domicile) is not in one of the "white countries", check if the end-user is listed in the "Foreign End-User List".** If you find the end-user's name in the Foreign End-User List, your export is highly likely to be subject to WMD catch-all controls (see Part 3). In particular, it is essential to apply for a license when the "category of concern" that the Foreign End-User List assigns to the end-user in question covers the proposed use of the goods or technology you are providing. In addition, please check carefully to see whether your export includes goods or technology listed as "examples of goods that are highly likely to be used in the development of WMDs (40 items)", as explained in Part 3 above.
- (iv) Even if, on the basis of Step 3, a license application does not seem necessary to export to the end-user in question, **it is still necessary to understand the nature of the end-user's activities, and to determine whether they may have any connections to military-related institutions, etc.** If you have any suspicions that the end-user may be involved in any way in the development of WMDs, you will need to apply for a license.
- (v) Even if, on the basis of Step 4, the end-user is determined to pose no threat, in order to be sure whether or not the export is subject to WMD catch-all controls, you now need to verify how the items you are providing are going to be used. In addition, if the end-user is in a **state or region that is subject to a UN arms embargo, you will need to carry out an additional review to determine whether the goods or technology you are providing are likely to be used in the development, production or operation of conventional weapons.** If yes, you will need to apply for a license.
- (vi) Finally, even if, on the basis of Step 5 above, you have determined that you do not need to apply for a license, **check whether METI has sent you a special notice concerning the export of the goods or technology in question.** If yes, you will need to apply for a license. However, catch-all controls will not apply where the export is a technology that is in the public domain (that is accessible to more than a small group of people).

Documents required for the application, and the office to which your application must be submitted, are detailed on the Security Trade Control Policy Division's website under "Application Procedures", for "Goods" and "Technology". **If you have any questions or concerns regarding license applications, you can contact the Regional Bureau of Economy, Trade and Industry, or the METI Security Export Licensing Division (Phone: 03-3501-2801).** Before making an enquiry, please prepare all the information you'll need, including, for control lists, the specific name of the item in the order along with its technical specifications, and for catch-all control, the country of the end-user, the item's classification in the Customs Tariff Table, the use to which the item will be put, and verified information on the end-user. Having all this information to hand will help the office to respond to your enquiry in full. For details, such as office hours, please check the following URL:  
<http://www.meti.go.jp/policy/anpo/kanri/tetsuzuki/madoguchi/main.html>.