University of Portsmouth Export Controls Guidance

Introduction

Export controls are needed for a variety of reasons, including national security and international treaty obligations. In the UK, the control of strategic goods and technology is undertaken by the Export Control Joint Unit (ECJU) (formerly ECO), and compliance with export controls is a serious obligation. The British Government recognises that UK researchers in various fields are frequently in contact with scientists and researchers in a wide variety of other countries. Their aim is not to restrict the publication of scientific papers and research but to prevent the misuse of knowledge and materials. The Government provides helpful guidance on export controls applying to academic research.

If you have any questions or need any further support after having read this guidance in full please contact ris@port.ac.uk, putting 'export control support needed' in the subject box.

Background

The proliferation of weapons of mass destruction (WMD) and missile systems for their delivery poses a threat to both regional and global stability. In keeping with international obligations set down in treaties such as the Nuclear Non-Proliferation Treaty (NPT), the British Government is committed to ensuring that UK science and technology are not exploited by WMD proliferators or terrorists.

Strategic Export Controls are one of the tools used by national authorities in most countries around the world as a barrier against proliferation-related trade. Export Controls prevent the transfer of 'technology' – tangible items and intangible information and expertise – to countries and programmes of concern. Another mechanism, which many countries have in place, is student vetting. In the UK, this takes the form of the Academic Technology Approval Scheme (ATAS) which concerns entry into programmes. This scheme applies to all students except EEA and Swiss nationals. However, while both of these tools are valuable, neither of these tools completely eliminates the need to be mindful of possible proliferation issues when running educational courses or embarking upon research.

The controls enacted by the UK are rarely used to prohibit an activity from taking place; however, by maintaining oversight of certain aspects of international trade and collaboration, the controls act to deter proliferators from seeking access to technologies in the first place. Nonetheless, both ATAS applications to study certain subjects submitted by applicants from outside the EEA and Switzerland and export licences applications to transfer technology to certain countries may be refused if a Weapon of Mass Destruction (WMD) connection is known (the researcher is informed or aware of or suspects this). Moreover, in line with international commitments, the UK prohibits the transfer of certain technologies to countries like Russia, Iran and North Korea, which at the time of writing were subject to UN sanctions.

Export Controls

Responsibility for implementing and managing Export Controls within the UK falls under the remit of the Export Control Joint Unit (ECJU) within the Department for Business and Trade (DBT). There are two types of export control with which individuals in the sciences and HEIs should become familiar:

The first relates to the export of strategic goods (items and technologies which are defined by the UK Consolidated Lists);

The second relates to end use controls, which can be invoked on any export or technology assistance given to a foreign party, even if the technology itself is not listed on the control lists.

Under certain circumstances, in both cases, an export licence from the ECJU may be required to carry out an activity; failure to obtain one could result in a criminal offence being committed.

Source Documents

This guidance document, and accompanying webpages, is adapted from the Higher Education Guide on Export Controls and The ATAS Student Vetting Scheme. Drafted in partnership by the Association of University Legal Practitioners and Project Alpha of King's College London. In partnership with the Export Control Organisation and the Foreign and Commonwealth Office. In addition to this guidance it is recommended that staff refer to this document if needed. The Government webpages linked to in the guidance are maintained by the relevant Government organisations.

An Advice Template for staff when asked about the impact of Export Controls on an international collaboration can be found in Appendix A5.

Guide for researchers

Both researchers and their universities must adhere to the legal requirements of export control legislation, although many activities conducted in universities are **exempt** from export controls. The University is committed to complying with UK Export Control law as set out in the **University's statement on exporting controlled items**. The responsibility for compliance with export control regulations ultimately rests with the **Principal Investigator** (PI) and University's guidance on exporting controlled items is available to help researchers fulfil their obligations under UK law. It is important to note that **failure to adhere to the requirements of the legislation is a criminal offence** and penalties may involve fines, legal costs and potentially a prison sentence (up to a maximum of 10 years).

PLEASE NOTE: Following the UK's exit from the European Union, from 1 January 2021 export control requirements have been expanded to include all exports of controlled dual-use items and technologies to the European Union, including **within the consortium of an EU-funded research grant**. For detail please see the guidance on **exporting controlled items and technologies to the EU.**

Export control can affect research activities and occasionally teaching. All University researchers need to know whether their work has the potential to be subject to export control legislation.

It is particularly relevant to researchers in the scientific and engineering disciplines but is the duty for all researchers to ensure that any University business they undertake is carried out in compliance with all applicable legal obligations.

In the academic context, export controls are most likely to apply in relation to scientific and technical research with potential military or Weapons of Mass Destruction (WMD) applications, particularly relating to but not limited to the following:

- The development of military and security-related goods, software or technology
- Nuclear science or engineering
- Missiles, aerospace and space technology

- Autonomous vehicles and stealth technology
- Some high strength materials and material production techniques
- Some chemicals with toxic properties
- Some viruses, pathogens and vaccines
- Some sensors and lasers
- Some high specification electronics and cryptography

Scope

Export control affects the physical, electronic or oral transmission **outside the UK** of the following:

Direct military use: Items as listed on the **UK Strategic Export Control Lists.**

1. **Dual-use technology:** Technologies designed for civilian end uses but have the capability to be used for WMD or military purposes as listed on the Control Lists.
2. **WMD end use**: Items that are not specifically listed on the Control Lists, but are intended, either in their entirety or in part, for WMD purposes. WMD controls only apply if you have been informed of, are aware or suspect WMD end use.
3. **Sanctions/embargoes**: Items to be exported to a specific country, which is subject to an embargo or sanctions (note that sanctions may include items that are not included on the Control Lists). End use controls apply to sanctioned activities; i.e. an export cannot occur if the exporter knows that the items would be used in relation to a sanctioned activity.
4. **Military end-use**: Items that are not specifically listed on the Control Lists, but you are aware or are informed that the items are (or may be) intended for the incorporation into or for the development, production, use or maintenance of military equipment in a location subject to an **arms embargo**, or where you are aware that items will be used as parts or components of military goods illegally obtained from the UK.

Transfers of items or information **within the UK** are only subject to export control when it is known that the ultimate end use or user is related to WMDs outside the UK (e.g. a UK subsidiary wholly owned by an overseas arms manufacturer). For a definition of WMDs see Appendix 6.

Controls may apply to material goods (e.g. equipment, materials), and also software, data, technology (e.g. blueprints, plans, diagrams, models, specifications, formulae, manuals or instructions) and know-how (through e.g. consultancy or, in some cases, teaching).

With the exception of nuclear technology, technology listed in the UK Consolidated Lists is only controlled if it is 'required' and 'necessary' for the development, production or use of the controlled items. The fact that it is for civilian use does not dispense with the need to seek a licence, thought it would be relevant to whether a licence would be granted.

Export may involve a physical transfer of goods, or it may involve a transfer of software, technology or knowledge by any means e.g. via the internet; in physical or virtual meetings, telephone conversations, emails, presentations or conferences; or licensing of IP overseas. Controls also apply to trafficking or brokering goods *between* two overseas countries and for exports of items.

An activity may be classed as an 'export' for the purposes of export control if it involves:

- Transfer (physical or electronic) of goods, technology, software and / or know-how from the UK to a destination outside the UK (including transit through the UK).
- Arranging or being involved in a transfer between two overseas countries.

- Transfer within the UK when it is known that the ultimate end use is WMD-related outside the UK (this includes teaching taking place in the UK).

Other scenarios of potential concern include the storage of digital information on overseas servers. In this case an "export" would only occur if the information on the server was downloaded to a location outside of the UK. Such as reading sensitive emails or accessing databases while on holiday.

In brief, key concerns are:

1. Technologies, material, equipment or know-how that could be used in nuclear, chemical, or biological weapons or their means of delivery of WMD.
2. Items that have been specially designed or modified for military use and their components
3. Dual-use items (those that can be adapted for use for civil or military purposes) which meet certain specified technical standards, and some of their components. **See below for guidance on dual-use** and also the Government definitions.

ATAS, which controls access by visiting academics, researchers and students from abroad to courses, which might be relevant to non-proliferation objectives, runs in parallel to export control legislation and compliance, does not satisfy export control obligations. Both need to be addressed: ATAS focuses on entry to the UK. Export control focuses on knowledge and material leaving the UK. Information and advice about ATAS can be found **here.**

Further guidance

A Decision Tree (Questions 1 to 4 below) and flow diagrams are provided to help you make an initial assessment about whether the rules apply and what needs to be done. The first flow diagram is simply for awareness raising. The second is more detailed and the following decision tree questions provide further explanation. Use the questions and the second flow chart together and if you answer "yes" to any of the following questions, seek advice as you may need to apply for a licence.

Decision Tree

If you answer 'yes' to any of the following questions seek advice. Contact ris@port.ac.uk, putting 'export control support needed' in the subject box.

Question 1. Was the technology imported from the US?

Universities should be aware that in some instances, controls from other territories may apply in addition to UK-administered controls. This is particularly common for US technologies, where re-export clauses often apply which prevent not only the goods, software or technology being re-exported to particular countries, but also can prevent it being transferred to or shared with foreign nationals within the UK.

If the technology is subject to US Export Controls this may affect exporting and also sharing with researchers within the University who are from overseas or have dual nationality. The US 'Chips Act' may also be relevant if working with certain semiconductors and advanced electronics, especially if Chinese collaborators are involved. These rules need to be satisfied, as well as UK export control requirements. Do not forget to consider UK Export Controls also.

Is the technology to be used for any purpose related to armaments, nuclear energy, weaponry or other military use? This needs to be cleared with the supplier.

Are you going to disclose the technology to non-UK nationals either inside or outside of your Department whether in the UK or abroad?

Question 2. The Technology

Note. The definition of 'technology' means specific information necessary for the development, production or use of goods or software.

The primary question that must be answered is whether the technology appears on the Export Control list. The ECJU offers a range of services to help with the process of classification to determine whether the technology is listed.

There are three key points to establish here:

1. Is the item or technology specifically designed for military or nuclear end uses?
2. Does the export include encryption software or hardware?
3. Do you need to check the UK Strategic Export Control List (Annex IV) of military or dual use items?

Are you unsure about whether the export control legislation applies to your work?

Is the technology in an area where teaching is ATAS controlled?

Are you collaborating with people or organisations based outside the UK, particularly in areas of conflict?

Do any Red Flags apply? (See below)

Might the output or application of your research assist in the development of weapons, armour or defence?

Are you collaborating with an organisation, which operates in any military related areas (e.g. a defence contractor)?

Does the funder or collaborator support any military related research (e.g. a defence ministry, or military university)?

Is it on Annex IV of the UK Strategic Export Control List?

Question 3. End use controls: Whom are you working with?

The end use controls look at who the end user is and what the end use is. The following list of questions may help you establish an end use or end user issue that you need to look into further.

Even if the item, technology or software is not listed in the UK Strategic Export Control List (Annex IV), a licence could also be required if the exporter knows, has been informed or suspects there is a WMD end use.

Have you been made aware that the item, information or software to be shared, shipped, hand carried, transmitted or transferred may support the design, development, production, stockpiling or use of a nuclear explosive device, chemical or biological weapons, or missiles?

Do you otherwise know or have any reason to suspect that such end use is envisaged?

Does the end-user country definitely, probably or possibly have a WMD or delivery system programme?

Are the items potentially of high, medium or low utility in relation to any of the activities listed in the WMD End-Use Control?

Are the items potentially of high, medium or low utility in relation to any WMD programme in the end-user country?

Consider if there are reasons to suspect use in connection with the development, production, handling, operation, maintenance, storage, detection, identification or dissemination of chemical, biological or nuclear weapons or other nuclear explosive devices, or the development, production, maintenance or storage of missiles capable of delivering such weapons

Are the items relevant to identified procurement requirements of such a WMD programme, either in the destination country or, where the destination country is known or suspected of being involved in passing on WMD-related items to a third country, in any of the suspected end-use countries?

Is the end user, importer, or any third parties to the transaction known to be of concern?

Is the identity and circumstances of the end user sufficiently known? Lack of information or any doubts about the end user may indicate the need to apply for a licence. If there was insufficient information a licence might be refused.

Is the affiliation of the oversea partner academic significant? If they work for a military university or military-funded lab, a licence may still be needed.

Question 4. Sanctions

Additional restrictions can apply when dealing with countries that are subject to sanction. These can include restrictions on the actions of individuals and entities, including their ability to travel or to use financial systems, and they can include additional restrictions on exports or trade activities, which often have the effect of broadening the UK Strategic Export Control List to include items which would not normally be included in the UK Consolidated List.

Does the transfer include parties from any country that is subject to UN or EU sanctions, as listed on the gov.uk website?

If so, take advice from the ECJU via RIS.

Export Control Workflows

Export Control Flowchart simple

Export Control Flowchart detailed

If you have any questions or need any further support after having read this guidance in full please contact ris@port.ac.uk, putting 'export control support needed' in the subject box.

Red Flags

There will be some areas of research and collaboration where researchers should always take advice. These are commonly known as the "Red Flags". If the research involves any of the following things then the UK Strategic Export Control List (Annex IV) need to be checked (see also the Online Checker Tools within the UK Consolidated Lists guidance to help). Some of the main Red Flags are below (N.B. this is not exhaustive. For this see the UK Strategic Export Control List (Annex IV)).

Red Flags	
Viruses and pathogens or related research.	Materials production techniques.
Vaccine technology, which might be used to inoculate troops using chemical or biological weapons.	Carbon fibre with high tensile properties, high nickel alloys, high grade aluminium, vacuum systems, propellants etc.
Civil technology which could be used or adapted as a component for military purposes.	High grade radio-active material – could it be emitted into the atmosphere and contaminate the environment?
Technology which could support activities in facilities which house weapons technology or delivery programmes (including hardened underground facilities and hermetically sealed buildings).	Ancillaries and support equipment at some facilities, such as those which house uranium enrichment centrifuges or nuclear fuel reprocessing facilities, can also be of concern even if the technology is itself ubiquitous
Hydrophones or sonar equipment.	Electromagnetic absorption.
Chemicals with toxic properties can cause serious injury or death. Could your research be applied for this purpose?	Unmanned equipment (even if used by you only for atmospheric research).
Fissile materials or radioactive materials or equipment for their detection or handling.	Uranium enrichment for non-civil nuclear energy.
Materials characterisation equipment.	Autonomous vehicles.
Opto-electronics (lasers).	Ground penetrating radar.
Ocean bottom survey equipment.	Stealth technology.

Dual List

This is a summary only – **consult the guidance** and **full list**.

The Dual Use List is split into nine categories (detailed below) and importantly, includes not only physical goods, but also software and technology.

Category	Title	Summary (should not be taken as complete)
0	Nuclear Materials, Facilities & Equipment	Controls nuclear technologies which are specifically designed for a nuclear end use. *Note: licences are typically required for transfers within the EU*
1	Special Materials and Related Equipment	Controls high specification dual-use materials, such as alloys, composites, and similar; and chemical weapon precursors and toxins*, many of which require licences for transfers within the EU*

2	Materials Processing	Deals with a wide variety of advanced manufacturing equipment, including high-accuracy multi-axis machine tools
3	Electronics	Controls advanced electronic components with military, space, or nuclear applications
4	Computers	Controls high-performance and high-accuracy computers
5	Telecommunications and information security	Controls communications and information security equipment, including some commercial grades of encryption
6	Sensors & Lasers	Controls a wide range of sensors with military application, including for use in space and a variety of lasers
7	Navigation & Avionics	Controls equipment that can be used for military navigation, including shock-proof gyros and accelerometers etc.
8	Marine	Controls underwater equipment
9	Aerospace & Propulsion	Controls space and aerospace technology

Common Misconceptions

Finally, this Guide should be understood and followed whilst bearing in mind these common misconceptions:

1. **"*Export Controls and student vetting is new*".** It is not the case that Export Controls have only recently been put in place. For many years, Export Controls have guarded against illicit trade activities. However, the emergence of new terrorist threats has made it even more vital to ensure that issues of responsibility and compliance are widely known and
2. **"*Non-proliferation controls are designed to restrict, vet or censor scientific research.*"** The purpose and objectives of Export Controls are not to inhibit legitimate collaborative research, which on the contrary, the government works to positively encourage. The purpose of Export Controls is simply to prevent misuse, often unwitting and preventable in nature, of technology in programmes of
3. **"*Export Controls and student vetting are unique to the UK research community*."** It is not the case that research communities in the UK are disadvantaged vis-à-vis their international counterparts. Academics and researchers working in other countries are also subject to similar controls and legislation formulated by their countries of origin and codified by international treaties and
4. **"*Not all countries are required to, and many do not, have an export control system.*"** This was the case until 2004, when resolution 1540 (UNSCR1540) was adopted by the United Nations Security Council. UNSCR1540 stipulates that all states should have effective domestic controls in place to prevent the proliferation of WMD and their delivery These controls include those relating to exports and trans-shipment.
5. **"*Most advanced economies do not insist on the actual implementation of these controls.*"** Whilst the effective implementation of export control regimes can sometimes present challenges, such regimes are followed, in many cases very rigorously, by most countries housing major producers of controlled technology. In the UK implementation includes robust enforcement by customs and border officials. Other countries also take seriously the implementation of non-proliferation controls by the academic community.
6. **"*The UK's licensing criteria are stricter than other countries*."** This is a common fallacy. Whilst successive governments have maintained a policy not to issue an export licence under certain circumstances, the UK's criteria have also been adopted by the EU as best Therefore,

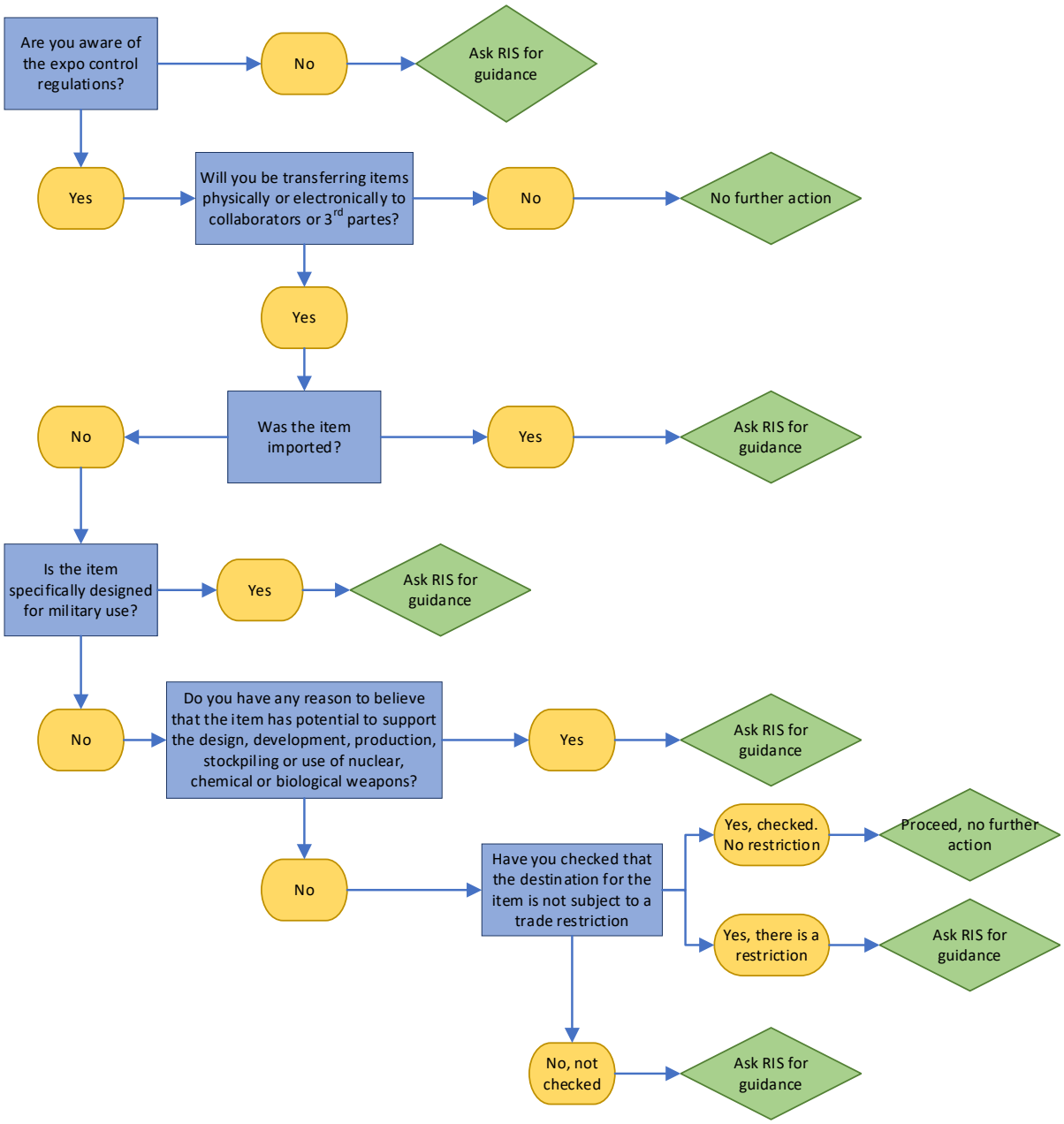
likeminded states will not issue licences for the export of strategic goods in those circumstances.

7. ***"All scientific research is except"***. There is an exemption for basic scientific research, however this applies to mostly theoretical research such as projects aimed at discovering new phenomena. Applied research fields or projects aimed at solving known problems are unlikely to be considered basic. NOTE: this exemption does not apply where there are military end-user concerns
8. ***"Export control licences aren't needed if research is going to be published"***. There is an exemption for technology that is already in the public domain; however, this does not apply for any exports/transfers of controlled technology that take place prior to publication. The research activity itself could constitute a violation of export controls. NOTE: this exemption does not apply where there are military end-user concerns
9. ***"It doesn't count as an export if I'm the recipient"***. The rules for digital and physical information are the same. If the destination of controlled technology is outside the UK, you may need an export control licence. This includes downloading emails or accessing controlled data while you yourself are overseas.
10. ***"It doesn't exist yet so it can't be controlled"***. Information or technology needed to develop/maintain/produce etc. controlled items can still be captured under export controls.

Appendix A: Export Control Flow Charts: Getting Started

A1. Basic awareness – to help researchers understand if they need to know more about Export Control. (Note: This flowchart does not ask researchers whether their goods are controlled. It is intended for use as an awareness raising tool only).

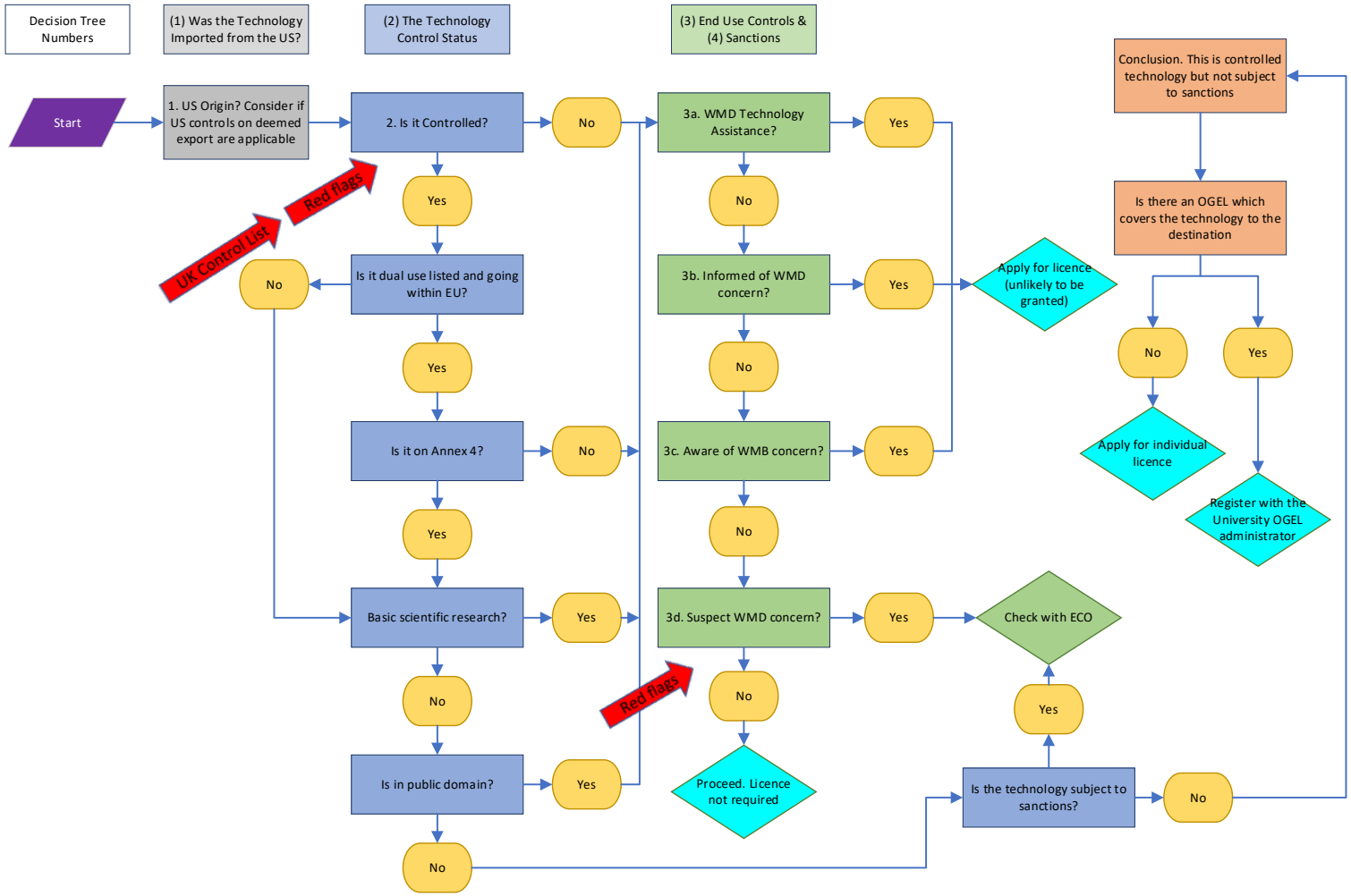
If you have any questions or need any further support please contact ris@port.ac.uk, putting 'export control support needed' in the subject box.



A2. When do the UK Consolidated Lists need to be considered?

This second flow chart links and cross references to the proposed Decision Tree. "Controlled" as used in this flow chart means the technology is on either the **Consolidated Military and Dual Use Lists** or any **Sanctions List.**

If you have any questions or need any further support please contact ris@port.ac.uk, putting 'export control support needed' in the subject box.



A3. Non-proliferation legislation - overview (Military List). Summary only – consult the full list and guidance.

ML	Description
1	Smooth Bore Weapons Small
2	Smooth Bore Weapons large
3	Ammunition and fuse setting devices
4	Bombs, torpedoes, rockets, missiles, other explosive devices
5	Fire control equipment and related alerting and warning equipment
6	Ground "vehicles" and components (military)
7	Chemical or biological toxic agents, toxic chemicals and mixtures containing such agents or chemicals, "riot control agents", radioactive materials, related equipment, components
8	Energetic materials, and related substances
9	Vessels of war, special naval equipment, accessories, components and other surface "vessels"
10	Aircraft, "lighter-than-air vehicles", unmanned aerial vehicles, aero-engines and "aircraft" equipment, related goods, and components
11	Electronic equipment, not specified elsewhere in this Schedule, as follows, and specially designed components therefor:
	a. Electronic equipment specially designed or modified for military use;
	b. Global Navigation Satellite Systems (GNSS) jamming equipment
12	High Velocity Kinetic Energy Weapon (KEW) systems and related equipment
13	Armoured or protective goods and constructions, as follows, and specially designed components therefor
14	Specialised equipment for military training or for simulating military scenarios, simulators specially designed for training in the "use" of any firearm or weapon specified in ML1 or ML2
15	Imaging or countermeasure equipment, as follows, specially designed for military use, and specially designed components and accessories
16	Forgings, castings and other unfinished "goods", specially designed for any of the "goods" specified in ML1 to ML4, ML6, ML9, ML10, ML12 or ML19
17	Miscellaneous goods, material and 'libraries'=, and specially designed components therefor
18	Production equipment and components as follows: a. Specially designed or modified production equipment for the "production" of goods specified in this Schedule, and specially designed components therefore. b. Specially designed environmental test facilities and specially designed equipment therefore, for the certification, qualification or testing of goods specified in this Schedule.
19	Directed Energy Weapon (DEW) systems, related or countermeasure equipment and test models, as follows, and specially designed components
20	Cryogenic and "superconductive" equipment, and specially designed components and accessories therefor
21	Software specifically designed or modified for the development production or use of other controlled technology
22	Technology, other than "technology" specified in ML22.b., which is "required" for the "development", "production" or "use" of goods or "software" specified in this Schedule

A4. Dual List

This is a summary only – consult the full list and guidance. The Dual Use List is split into nine categories, which are detailed below. Importantly, the Dual Use List includes not only physical goods, but also software and technology.

Category	Title	Summary (should not be taken as complete)
0	Nuclear Materials, Facilities & Equipment	Controls nuclear technologies which are specifically designed for a nuclear end use. Note: licences are typically required for transfers within the EU
1	Special Materials and Related Equipment	Controls high specification dual-use materials, such as alloys, composites, and similar; and chemical weapon precursors and toxins, many of which require licences for transfers within the EU
2	Materials Processing	Deals with a wide variety of advanced manufacturing equipment, including high-accuracy multi-axis machine tools
3	Electronics	Controls advanced electronic components with military, space, or nuclear applications
4	Computers	Controls high-performance and high-accuracy computers
5	Telecommunications & Information Security	Controls communications and information security equipment, including some commercial grades of encryption
6	Sensors & Lasers	Controls a wide range of sensors with military application, including for use in space and a variety of lasers
7	Navigation & Avionics	Controls equipment that can be used for military navigation, including shock-proof gyros and accelerometers etc.
8	Marine	Controls underwater equipment
9	Aerospace & Propulsion	Controls space and aerospace technology

A5. Advice Template (when asked about the impact of Export Controls on an international collaboration):

1. Look at the Decision Tree and red flags in and the flow charts in A1 and A2 above. You might also find it useful to look at the case studies in section 6 of the Higher Education Guide on Export Controls (the Guide).

2. If it seems the work might fall within the list of controlled items, check the Consolidated Lists.

3. If the item, technology or knowledge is on the list (i.e. the research is in the area of controlled technologies), there are 3 questions:

- Is it "required" and "necessary" for the development, production or use of the controlled items? Only that needs a licence. (The fact that the knowledge is intended for civilian use does not dispense with the need to seek a licence, although it would be relevant to whether a licence would be granted) See section 2.2(D) of the Guide.
- Is the work already in the public domain? If so it is decontrolled – see section 3.2 of the Guide.
- Is the work fundamental scientific research? If so it is decontrolled – see section 3.3 of the Guide.

4. If it is not on a list (or is decontrolled), then a licence is not required unless the researcher knows or suspects that the recipients/collaborators are engaged on a WMD programme, when no assistance of any kind can be given – see sections 2.2(E) and (F) of the Guide.

5. If the research is within the controls, then no knowledge can be exported out of the EU (or in some cases out of the UK) without a licence; that includes project reports.

- For the meaning of 'export', see section 1.2 of the Guide. For the impact on teaching see section 2.2(G).

Note: The legislation is backed by criminal penalties (for which the University and/or the individual researcher would be liable), so the matter needs to be considered carefully, most especially by the researchers, who are the people who will know what the research entails or might entail.

A6. Definition of Weapons of Mass Destruction (WMD)

WMD purposes means the goods, software or technology could be used for:

- Chemical, biological and nuclear weapons
- Other nuclear explosive devices
- The missiles and missile systems that are the means of delivery of WMD

This includes:

- Development
- Production
- Handling
- Operation
- Maintenance
- Storage
- Detection
- Identification
- Dissemination

For further information see: https://www.gov.uk/guidance/end-use-controls-applying-to-wmd-related-items-including-technical-help#wmd-purposes