Higher Education Guide And Toolkit

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.

Version 1 2nd April 2015

BIS
Department for Business Innovation & Skills

Foreign & Commonwealth Office

Foreword

This document has been prepared by Project Alpha of King's College London and the Association of University Legal Practitioners, with support from the Export Control Organisation and the Foreign and Commonwealth Office. The purpose of the document is to provide a comprehensive yet accessible guide for university practitioners on the export control legislation applicable in the UK and The Academic Technology Approval Scheme (Student Vetting Scheme) for which are separate but complementary regimes. This document also contains tools prepared by Project Alpha and AULP members, including policy statements, flowcharts and questionnaires that can be used by university staff to determine if those controls affect them and how to manage compliance.

No specific change in legislation or policy prompted the preparation of this guide.

Who is this document for?

This Guide is specifically targeted at university vice chancellors, legal and compliance departments, research support teams and technology transfer offices. It includes suggested templates for working with individual academics and researchers involved in academic disciplines affected by non-proliferation-related controls, particularly engineering and science fields since it is these areas that are most likely, but not exclusively, to be affected by Export Controls. Ideally, awareness and guidance on Export Controls should form an integral part of an academic institution's research policies and guidance on good practice in research.

Context

Controls over strategic goods or technology (collectively referred to as "Export Controls") have been enacted in the UK for decades, with weapons of mass destruction (WMD) provisions in relation to transfers of technology or technical assistance being in place from at least 2004. Equally all EU countries are required to maintain a system of end-use export and transfer controls. By international law, all countries which are members of the UN have been required since 2004 to maintain a system of Export Controls in order to prevent the proliferation of weapons of mass destruction. This requirement affects not just commercial entities, but applies to all entities (commercial or non-commercial) including universities and researchers that might 'export'. The collective implications of these commitments and obligations is that in some cases individual academics in a university may need an export licence from the Export Control Organisation to carry out an activity - failure to obtain one being a criminal offence.

There are nonetheless many misconceptions about Export Controls (see Appendix C para1.3).

NOTE: This document is for guidance only. It is NOT a statement of law. Before carrying out any activity subject to strategic controls (exports, transfers of technology, provision of technical assistance, etc.) you should refer to the legal provisions in force at the time.

Contents

A. EXPORT CONTROL LEGISLATIVE BACKGROUND 3
1. The Academic Community and Non Proliferation Controls 3
1.1 Export Control Overview 3
1.2 What does 'export' mean? 3
1.3 Why Exports are Controlled 4
1.4 Academic Technology Approval Scheme (ATAS) Overview 5
1.5 The "four pillars" 5
1.6 Other Controls 6
2. Export Control Framework 7
2.1 Scope of the Controls 7
2.2 The Controls 7
2.3 Trade and Arms Sanctions imposed by international resolution 16
3. De-control (Exemptions) 17
3.1 The Exemptions (not applicable to End Use or Sanction Controls) 17
3.2 Meaning of Public Domain 17
3.3 Definition of "Basic scientific research" 17
3.4 Applying the Decontrols 18
3.5 WMD End use control and exemptions? 18
4. Licensing and enforcement 19
4.1 Types of licence in the UK 19
4.2 Enforcement 19
5. The Academic Technology Approval Scheme (ATAS) 20
5.1 Overview 20
5.2 How does the process work? 20
6. Case studies 21
6.1 Nuclear Research 21
6.2 Nano technology case study 23
B. IMPLEMENTATION 25
7. Implementing non-proliferation controls in universities 25
7.1 Apply the Export Control Framework 25
7.2 What kind of activities are of highest concern? 25
7.3 Which disciplines are likely to be most affected? 26
7.4 Export Control Implementation 26
7.5 The Tool Kit: The Export Control Decision Tree: Flow Charts, Questions, Red Flags 27
7.6 Applying for a Licence and Enforcement 28
7.7 ATAS Implementation 28
8. Further Information about the ECO 31

APPENDICES 33
Appendix A: THE TOOL KIT 33
A.1. Decision guide for researchers – introduction 33
A.2. The Decision Tree 33
A.3. Red flags 36
Appendix B: Export Control Flow Charts: Getting Started 38
Appendix C: Non-proliferation legislation - overview 40
C.1. Military List 40
C.2. Dual List 41
C.3. Background 42
C.4. Export Controls 42
C.5. Common Misconceptions 43
Appendix D: Legislative Background 44
Appendix E: End-use controls in legislation 46
Appendix F – Legal background to exemptions 48
Appendix G – Glossary of export control terms 49
Appendix H - US Export Control 50
H.1. Useful links 50
H.2. Summary 50
H.3. ITAR 50
H.4. EAR 51
H.5. Allowing access to US technology 51
H.4. Suggested contract clause for use in collaboration agreements with US collaborators 58
Appendix I: Example of a university policy or statement to provide on academic website or intranet 59
Appendix J: University web page on Export Control and Advice Template 61
Acknowledgements 63

HOW TO USE THIS GUIDE

- **Part A provides a guide to the legislation.**
- **Part B suggests some implementation approaches.**
- **Appendix A proposes a tool kit for researchers.**
- **Appendix H sets out some possible approaches to US export control requirements.**
- **Appendices I and J propose wording for a policy and a web page, and an advice template.**

A. EXPORT CONTROL LEGISLATIVE BACKGROUND

The legislative background is set out in Appendices C and F.

1. The Academic Community and Non Proliferation Controls

1.1 Export Control Overview

UK universities are operating in an increasingly international arena in their research and teaching collaborations. Whilst this is supported and encouraged by the British Government, it is vital to remember that some knowledge held and activities conducted by academics and researchers do have the potential to be misused. Researchers and universities are therefore required to adhere to Export Control requirements and other measures intended to prevent UK know-how from being used to forward WMD programmes.

Whilst further detail will be provided later in this document, it important to note at this point that failure to adhere to the requirements of the legislation is a criminal offence with potential fines, legal costs and prison sentences of up to 10 years (see further section 4.2).

Compliance with Export Controls is a serious obligation but it is manageable. This guide and related tools endeavour to provide the means for academics and university administrators to understand how the rules apply and what needs to be done.

Through the Export Control legislation, the UK implements international treaty obligations, as well as the foreign policy of the UK which is often coordinated with likeminded states. Foreign policy and international treaty commitments can include the imposition of EU or United Nations trade sanctions or arms embargoes which can affect activities conducted by university researchers. Export Control legislation is administered by the Export Control Organisation (ECO) in the Department of Business Innovation and Skills. The ATAS Student Vetting Scheme is implemented by the FCO.

1.2 What does 'export' mean?

Normally Export Controls apply to the physical removal of goods or the transfer (by any means) of goods, technology[1] or software and/or knowledge (which may capture teaching) from the UK to a destination outside the UK. However controls can apply to transfers by facsimile, e-mail and also telephone and, under exceptional circumstances, to transfers within the UK when it is known that the ultimate end use is WMD related outside the UK.

Export can take place via physical or electronic means:

[1] Technology means information necessary for the development, production or use of goods controlled by the regime. This information may take the form of blueprints, plans, diagrams, models, formulae, tables, engineering designs and specifications, or manuals and instructions, either written or recorded on other media or devices such as disks, tapes or read-only memories. (See the definition in the Export Control Order 2008 Regulation 2). The EU Dual-Use Regulation (EC) No 428 2009 refers also to information such as skills, training, working knowledge or consulting services)

- by being shipped or freighted overseas (including carriage of a laptop on a trip for example); or
- any electronic transfer (fax, email, telephone, text messaging or video-conferencing) from within the UK to a person or place abroad. Oral transmission by telephone could be within the scope where the detail about the technology is contained in a document and is read out or communicated so as to achieve substantially the same result as if the recipient had read the document[2].

1.3 Why Exports are Controlled

Exports are controlled as part of the UK national security and foreign policy objectives; and in line with UK international obligations and commitments[3]. Export Controls principally regulate export of military items from the UK to anywhere in the world and dual use items (non-military items which may also be used for military purposes) to outside the EU, though some more sensitive exports also require licences from the UK to other EU States. Exports are also controlled if they might be used for WMD.

Exports may be subject to refusal where there is an unacceptable risk that they are destined for use in WMD programmes or contribute to human rights abuses or have military applications.

There are 8 criteria (known as the "consolidated criteria") against which all applications for a strategic export control licence are assessed on a case by case basis, namely that the export would[4]:

- contravene the UK's international commitments (e.g. breach of applicable arms embargoes or other sanctions)
- be used for internal repression or the abuse of human rights
- provoke or prolong armed conflicts or aggravate existing tensions in the destination country
- be used aggressively against another country
- adversely affect the national security of the UK or allies
- be to a destination where the behaviour of the buyer country raises concerns with regard to its attitude to terrorism or respect of international law
- be diverted or re-exported under undesirable conditions
- in the case of developing countries, seriously hamper the sustainable development of the recipient country.

Exports can also be refused on other national security grounds or where an export is contrary to stated Government policy.

[2] Export Control Order 2008 No3231 Regulation 2, definition of "transfer by electronic means"
[3] See Foreign and Commonwealth Office's Counter-Proliferation Department website at: https://www.gov.uk/government/policies/countering-weapons-proliferation (accessed 27/03/2015)
[4] The consolidated criteria for export licence assessment', gov.uk, available online at: https://www.gov.uk/assessment-of-export-licence-applications-criteria-and-policy (accessed 27/03/2015)

Universities have a duty to ensure that staff are aware of Export Controls and that Export Controls are adhered to by individuals acting on behalf of their university. Individual staff members have a responsibility to comply with both the export control laws and any related policies set by their university.

1.4 Academic Technology Approval Scheme (ATAS) Overview

ATAS runs in parallel to export control legislation and also must be adhered to by universities. ATAS places obligations on students and universities to ensure that any foreign students who are enrolled on certain advanced courses have been appropriately certified by government authorities. Failure to adhere to the requirements of ATAS could affect a university's ability to sponsor students.

It should be noted that compliance with The Academic Technology Approval Scheme does not of itself satisfy the requirements of export control legislation. Export Control requirements have to be worked through in addition. They are separate measures.

ATAS is further described in section 5 below.

1.5 The "four pillars"

At an international level there are four pillars which seek to control the proliferation of weapons:

- Treaties - the Nuclear Non-Proliferation Treaty (NPT), the Chemical Weapons Convention (CWC), and the Biological Toxin Weapons Convention (BTWC).
- Regimes – there are four main export control regimes to which the UK subscribes: The Nuclear Suppliers Group, The Australia Group, The Wassenaar Arrangement[5], and the Missile Technology Control Regime.
- UNSCR 1540 – A UN universally binding obligation to develop and enforce legal and regulatory measures against the proliferation of WMD and their delivery systems. This is particularly designed to prevent the involvement of non-state actors in the proliferation of WMD.

[5] The Wassenaar Arrangement is a multilateral export control regime with 41 participating states including many former COMECON (Warsaw Pact) countries. It was established to contribute to regional and international security and stability, by promoting transparency and greater responsibility in transfers of conventional arms and dual-use goods and technologies, thus preventing destabilising accumulations. Participating States seek, through their national policies, to ensure that transfers of these items do not contribute to the development or enhancement of military capabilities which undermine these goals, and are not diverted to support such capabilities. For more information on the Wassenaar Arrangement, see: http://wassenaar.org (accessed 27/03/2015)

- UN sanctions – These are generally targeted against the import and export of arms and other materials. They can be targeted against, specific states (North Korea, Iran etc) and individuals or firms.

All of the above are implemented at the national level.

1.6 Other Controls

There are other controls which potentially affect work undertaken at universities but which are outside the scope of Export Control legislation (and which are therefore not covered in this Guide) which also need to be considered. Non-proliferation Export Controls operate independently from other Government legislation or schemes. Compliance with other legislation will not necessarily mean that an individual or an institution is not subject to other legislation. For example ATAS compliance does not mean that Export Control rules have been met.

Some examples include:

- Legislation (health and safety and anti-terrorism) controls particular areas of science and engineering such as bacteriology and toxicology. In some cases, relevant equipment and technology is covered in the export control regime through inclusion on the controlled lists. But note that an individual working with pathogens in compliance with Health and Safety Regulations is not exempt from End-Use Controls under Article 10 of the Export Control Order 2008.
- Restrictions on the export of certain non-strategic categories of goods such as medicines, animal products, arts or antiques. There is end-use control of certain medicines (Article 4A of the Export Control Order 2008, which covers the movement of certain medicinal products to the US).

Reporting Requirements: Universities that conduct nuclear related research should also be aware of specific reporting requirements in relation to the International Atomic Energy Agency Additional Protocol[6].

[6] For more information on IAEA safeguards and the Additional Protocol, see: http://www.iaea.org/publications/factsheets/iaea-safeguards-overview (accessed 27/03/2015)

2. Export Control Framework

2.1 Scope of the Controls

There are four primary elements of the UK Strategic Export Controls.

i. Control of the export of military, and certain paramilitary and radioactive items outside the UK.

ii. Exports to destinations outside the EU of controlled dual use technologies as listed on the EU Dual Use List. Generally, these are civil items and technologies that could be used for WMD purposes or potentially have military application.

iii. Export is also restricted for more sensitive controlled dual use items of technology on the Dual use list (Annex IV EU Dual Use Regulation) to any destination including within the EU.

iv. "Catch-all" control. This is based on end-user concerns and is intended to control goods and technologies which are not listed but which have a possible utility in an area of concern:

- for WMD, namely for chemical, biological or nuclear weapons or other nuclear explosive devices or their delivery; or
- for a military end-use in an embargoed destination.

Export Controls cover the following:

- export of goods, software and technology/know-how
- physical and electronic transfer of items to a destination outside the UK
- the transfer of knowledge within the UK for use in a WMD programme outside the UK (including teaching taking place in the UK)
- the transit of controlled items through the UK
- trafficking and brokering (arranging the transfer of certain items - particularly military goods – between two third countries): this is less likely to affect universities or researchers.

The main areas of concern are military technology and technologies that can be used in nuclear, chemical, or biological weapons or their means of delivery.

2.2 The Controls

A) UK Military and Paramilitary List

(No transfer to any destination outside the UK without a licence)

These are the national controls consisting of the UK Military List, UK Security and Human Rights List and the UK Dual-Use List ("the UK Consolidated Lists"). In addition, there are controls on certain radioactive sources under the UK Radioactive Sources List.

In the case of the UK Lists, Export Controls apply to exports or transfers out of the UK (i.e. licences are even required when exporting to EU countries). Unlike the EU Dual-Use List where it is the EU that has competence for changes, the UK has authority to determine changes to the Military and other UK Lists. The UK nonetheless generally does not act on its own; it coordinates policy at the EU level and generally adheres to the Munitions List maintained by the Wassenaar Arrangement.

If an item fits into any of the UK List categories listed, a licence is required. (See further Appendix C 1.1.)

Some Military List examples:

- Guns, tanks, fighter planes and warships
- Phased-array radar antennae and weapon-locating systems
- Thermal imaging devices
- Target acquisition and tracking systems.

B) The EU Dual-Use List

(No licence generally required unless transferring outside the EEA)

Dual use technologies are those that are designed for civilian end uses but have the capability to be used for WMD/military purposes.

The EU has the competence over the list of dual use items that are subject to control. The EU Dual-Use Regulation List controls[7] apply largely just to exports or transfers out of the EU, but there are some exceptions to this general rule.

If an item is listed on the consolidated list, a licence is required. (See further Appendix C 1.1.)

As noted above some of the more sensitive dual-use items require a licence for export within the EU – see Annex IV of the EU Dual Use List for a list of the relevant items. This includes nuclear reactor related items, certain chemicals, biological agents and viruses.

The underlying reason for Annex IV is that national governments are obliged to report on the transfer of these specific items to the relevant international export control regime. The listing of an item on Annex IV does not mean that an export licence is more likely to be refused.

Some Annex IV Examples:

- Nuclear (e.g. complete nuclear reactors and parts thereof, and dual-use parts and materials)
- Chemicals (e.g. precursors for toxic chemical agents such as Potassium Cyanide 150-50-8)
- Micro-organisms & toxins (e.g. Lassa fever virus in the form of isolated live cultures, apart from vaccines)

[7] The EU Dual-Use Regulation (EC) No 428 2009 and The Export Control Order Regulations 4, 5, 7 and 8

- Navigation and avionics (e.g. continuous output accelerometers specified to function at acceleration levels exceeding 100g)
- Intangible technology associated with the design, production, or use of controlled goods is often also controlled.

There is an additional EU Human Rights List listing certain items.

C) UK Strategic Export Control Lists: the consolidated list of strategic military and dual-use items that require export authorisation

("The UK Consolidated Lists")

As their name suggests, the UK Consolidated Lists are listings of goods and technology. The UK Consolidated Lists combine the lists set out in section 2.2(A) and (B)[8]. Any goods software or associated intangible technology which is expressly for use in a military, WMD, or missile systems are likely to be listed in the UK Consolidated Lists. The lists also include dual use technology. If an item is included on the lists, it does not mean it cannot be exported, but it means that any individual wishing to transfer such an item by electronic means or physically to export it will require an export licence to be able to do so.

The UK Consolidated Lists cover a wide range of items from diverse industries and academic disciplines. Whilst examples are given below for illustration, the full UK Consolidated Lists should always be consulted. This is most easily done by consulting the ECO Goods Checker[9].

UK Consolidated Lists (UK STRATEGIC EXPORT CONTROL LISTS) Contents

- Introduction
- UK Military List [Schedule 2 to the Export Control Order 2008]
- UK Dual-Use List [Schedule 3 to the Export Control Order 2008]
- EU Human Rights List [Annexes II and III of Council Regulation (EC) No. 1236/2005]
- UK Security and Human Rights List [Articles 4A and 9 to the ECO 2008]
- UK Radioactive Source List [Schedule to the Export of Radioactive Sources (Control) Order 2006]
- EU Dual-Use List [Annex I to Council Regulation (EC) No. 428/2009]:
- Category 0 Nuclear materials, facilities and equipment
- Category 1 Special materials and related equipment
- Category 2 Materials processing
- Category 3 Electronics

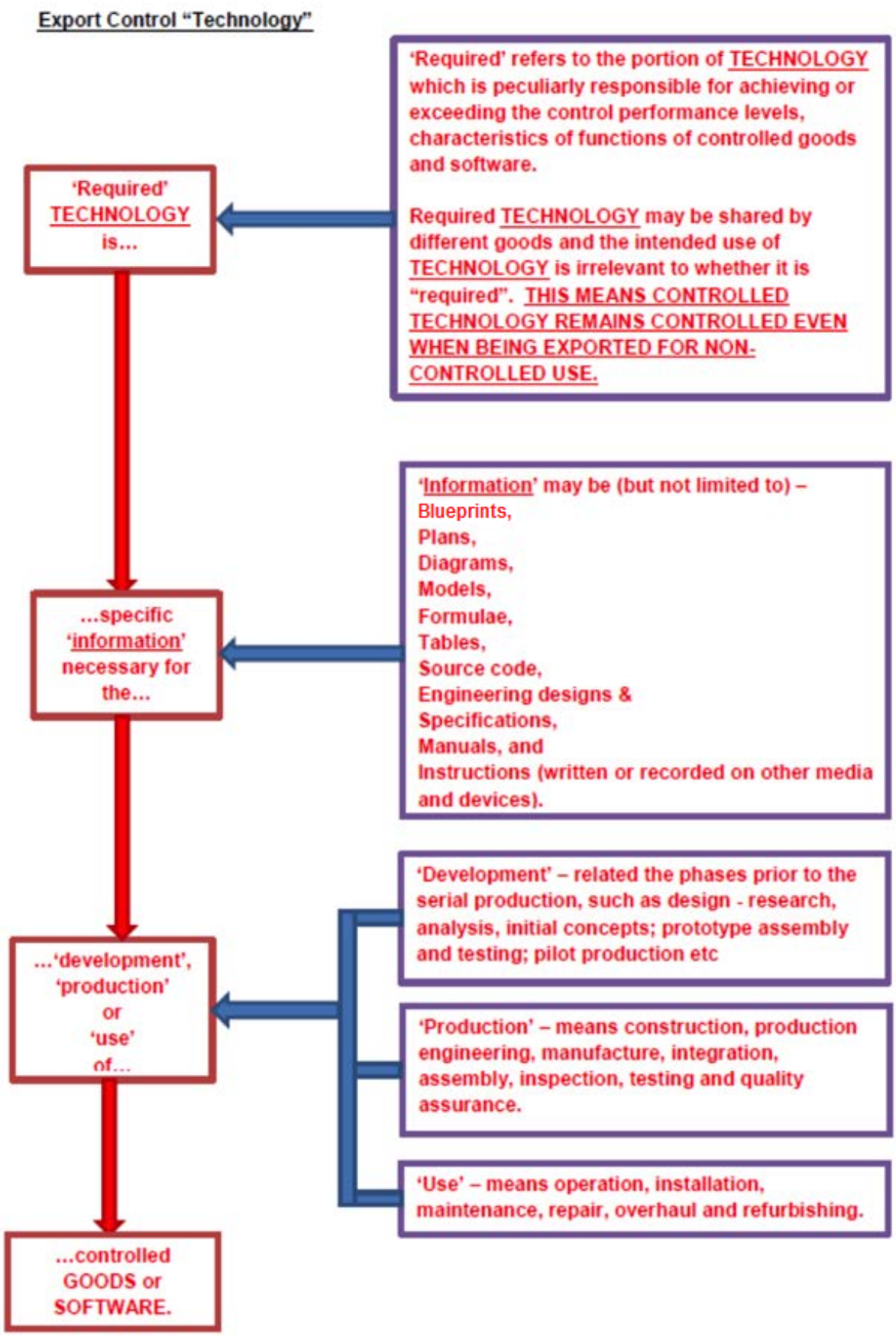
[8] https://www.gov.uk/government/publications/uk-strategic-export-control-lists-the-consolidated-list-of-strategic-military-and-dual-use-items-that-require-export-authorisation (accessed 27/03/2015)

[9] See Section 2.2(e) below

- Category 4 Computers
- Category 5 Telecommunications and "information security"
- Category 6 Sensors and lasers
- Category 7 Navigation and avionics
- Category 8 Marine
- Category 9 Aerospace and Propulsion EU Dual-Use List [Annex IV to Council Regulation (EC) No. 428/2009]

D) The concept of required/necessary technology

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 the knowledge is intended for civilian use does not dispense with the need seek a licence, though it would be relevant to whether a licence would be granted.


Export Control "Technology"
'Required' refers to the portion of TECHNOLOGY which is peculiarly responsible for achieving or exceeding the control performance levels, characteristics of functions of controlled goods and software.
Required TECHNOLOGY may be shared by different goods and the intended use of TECHNOLOGY is irrelevant to whether it is "required". THIS MEANS CONTROLLED TECHNOLOGY REMAINS CONTROLLED EVEN WHEN BEING EXPORTED FOR NON-CONTROLLED USE.
'Required' TECHNOLOGY is...
...specific 'information' necessary for the...
'Information' may be (but not limited to) –
Blueprints,
Plans,
Diagrams,
Models,
Formulae,
Tables,
Source code,
Engineering designs & Specifications,
Manuals, and
Instructions (written or recorded on other media and devices).
...'development', 'production' or 'use' of...
'Development' – related the phases prior to the serial production, such as design - research, analysis, initial concepts; prototype assembly and testing; pilot production etc
'Production' – means construction, production engineering, manufacture, integration, assembly, inspection, testing and quality assurance.
'Use' – means operation, installation, maintenance, repair, overhaul and refurbishing.
...controlled GOODS or SOFTWARE.

E) Checking the UK Consolidated Lists

The UK Consolidated Lists are maintained by the ECO[10].

Searches can be carried out either by using the full lists or, alternatively, by registering to use the Goods Checker tool to check for items on the lists. The Goods Checker website is a database which allows you to search the lists for keywords. It is accessible at: http://www.ecochecker.co.uk/goodschecker (accessed 27/03/2015).

The ECO offers training on use of the ECO Checker. Institutions should also have in place mechanisms to handle queries from academics, be it through seeking advice of the ECO, designated staff or the use of external consultants. The Alpha Project of Kings College London can offer assistance in this regard[11].

Further guidance is also available on the ECO pages on gov.uk about how to self-rate goods as well as the structure of the UK Consolidated Lists and the ECO's Rating Enquiry Service. The ECO's Technical Assessment Unit can also be asked for a judgement on the legitimacy of an export or the transfer of controlled good via Spire. Note that this service was suspended as of 1 January 2015.

Using relevant keywords you can search either:

- the Control List Classification Search Tool (on the SPIRE database) for Dual and Military Lists and End Use, or
- the Goods Checker database (just for the Dual and Military Lists).

Each institution needs to be registered on Spire in order to submit end use enquiries.

F) WMD End use controls

WMD End-Use Controls apply when the goods or technology are not on the UK Consolidated Lists but, or may be, intended, either in their entirety or in part, for "WMD purposes". For the purposes of Export Control "WMD end use" means[12]:

> *"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 delivery of such weapons".*

Missiles (unmanned delivery systems) include ballistic and cruise missiles and unmanned aerial vehicles.

The ECO publishes guidance on assessing the risks of WMD end use[13].

- End Use Controls typically involve an export. However, the passing of information (including through teaching) could be subject to control if for example the tutor

[10] The Consolidated List of Strategic Military and Dual-use technologies that require export authorisation is maintained by the ECO at: http://www.bis.gov.uk/assets/biscore/eco/docs/control-lists/12-1014-uk-strategic-export-control-list-consolidated.pdf/ (accessed 27/03/2015)
[11] More information on Project Alpha can be found on the project website: http://www.kcl.ac.uk/sspp/departments/warstudies/research/groups/csss/alpha/hub.aspx (accessed 27/03/2015)
[12] Export Control Order 2008 No3231 Regulation 2
[13] https://www.gov.uk/weapons-of-mass-destruction-wmd-end-use-control (accessed 27/03/2015)

knew that the student intended to transfer the information to a destination for 'WMD purposes'[14].

- Providing technical assistance to a WMD programme is subject to end use control.

Note there is also military end use control, which applies to the countries that are subject to full scope arms embargo. However this is less likely to affect universities.

The general principle governing End Use Controls is that the exporter must not export without a licence if he or she has been informed or is aware of or suspects there is intended WMD end use. (See further the Glossary in Appendix G.)

- Consider the list at https://www.gov.uk/weapons-of-mass-destruction-wmd-end-use-control (accessed 27/03/2015)
- The case study in section 8 gives an example of how to assess the effect of End Use Controls.
- Considering 'suspicion' is one aspect of the Decision Tree in Appendix B.

The Export Control Order 2008 No 3231 (and the EU Dual Use Regulation 2009) restricts various kinds of activities relevant to end use control as summarised in the following table:

[14] Article 10 of the Export Control Order 2008. See also section 2.2(g) below.

Activity	Reference	Aspects	What is the test?		
			Informed	Aware	Suspects
Export for WMD end use outside the EU	EU Regulation Article 4	Goods, software and technology	✓	✓	✓ must make reasonable enquiries to be satisfied no WMD purpose
Export from the UK for WMD end use outside the EU[15]	UK Order Reg 6 EU Regulation Article 6				
Transfer within the UK for WMD end use outside the EU	UK Order Reg 10	Software and technology only	✓	✓	x
Export by a UK person (located outside the EU) for WMD end use outside the UK	UK Order Reg 11		✓	✓	x
Physical (non-electronic transfer) from the UK for WMD end use outside the UK	UK Order Reg 12		✓	✓	x
WMD technical assistance to a person or place outside the UK	UK Order Reg 19	Technical assistance	✓	✓	x

End use controls would not be triggered simply by virtue of either:

- The subject being studied;
- The nationality of the recipient of the information (i.e. the student's nationality);
- Nor any combination of these generic issues.

Technical assistance to a WMD programme[16] (weapons of mass destruction Technology Assistance)

There are specific controls applying to the provision of technical assistance to a WMD programme – where such assistance is provided on its own and not as part of an export or a technology transfer. This would require a special type of licence – a WMDTA licence (which is unlikely to be granted) covering

- Technical assistance related to WMD end-use made by any means (including face-to-face discussions and demonstration) ;

[15] Article 6 controls the export (from the UK) but only if the WMD destination is outside the EU (even if the goods stop in transit in another EU State)

[16] Export Control Order 2008 No3231 Regulation 19. Technical assistance is broadly defined: "any technical support related to repairs, development, manufacture, assembly, testing, maintenance, or any other technical service, and may take forms such as instruction, advice, training, transmission of working knowledge or skills or consulting services; including verbal forms of assistance".

- Technical assistance related to a WMD end-use made within the UK or by UK persons outside the EU (where the end-user is outside the EU).

The activity is controlled if the person giving the assistance is informed or is aware that the assistance is to be used for WMD purposes.

These provisions are not aimed specifically at the scientific or academic communities. However, they could impact upon research in the disciplines affected by Export Controls (see below section 4).

Whatever the activity, anyone with clear grounds for suspicions (or actual suspicions) about a possible WMD end-use is advised to contact the Export Control Organisation for advice on whether in the particular circumstances of the proposed transfer a licence would be required.

G) Does Export Control have an Impact on Teaching?

Yes, in rare cases it is possible.

Normally undergraduate teaching is outside the scope of Export Controls for several reasons. First, teaching generally does not normally address controlled technology. Second material used for teaching is generally in the public domain and teaching often disseminates 'basic scientific research'.

The same may not be true of post-graduate teaching which may involve translational research rather than fundamental study. If the postgraduate teaching is the area of a listed technology, a licence is required if it involves export (i.e. sending material from the UK) of unpublished information which would be required and necessary for the use, development or production of listed items.

There are some circumstances where Export Controls affect all teaching including transfer of information within the UK. For example, end use controls would apply if the tutor had been informed, was aware or had reason to suspect that a student intended to use the knowledge for WMD purposes.

Particular consideration should be given to course notes. While such information is generally in the public domain (and thus decontrolled), if the academic (i.e. the exporter) for example had been informed that that information was intended for a WMD end use, a licence would in principle be required for the teaching.

Comparative examples of when Article 10 End-Use Controls on teaching would be triggered	
Article 10 (controls on transfers within the UK) would not be triggered simply due to a student being from a country of proliferation concern.	Article 10 could apply if a tutor came to be aware, through specific evidence that one of their students intended to make use of their studies for a WMD programme outside the EU, regardless of their nationality.
Article 10 would not be triggered simply due to the subject of research being of potential utility in the development of chemical weapon precursors.	Article 10 controls would apply if a researcher came to be aware that their international partners intended to use their joint findings for a WMD programme outside the EU.

2.3 Trade and Arms Sanctions imposed by international resolution

Sanctions restrict certain forms of trade and can be imposed by EU and UN resolutions or by the UK acting unilaterally. Sanctions normally have four aspects:

- Absolute prohibition of the export of certain items to certain individual entities or countries. This usually applies to items in the UK Consolidated Lists. Sanctions rarely specifically target students, but an indirect effect of sanctions may be that it might become unlawful to teach certain subjects to students from certain countries (e.g. prohibition of technical assistance in relation to arms/weapons which may result in Iranian nationals being excluded from certain teaching programmes in the UK). Thus sanctions could result in preventing citizens of the target country from studying certain subjects outside the target country (i.e. it is likely that an Iranian citizen who wished to study nuclear engineering outside Iran might be unable to do so because of UN sanctions on Iran, which have been in place since 2006/2007).
- Absolute prohibition of the export or import of other specified materials.
- Imposition of end use controls meaning that an export cannot occur if the exporter knows that the goods are destined for use with, or in relation to, the sanctioned activity (i.e. If the goods were destined for use by the Atomic Energy Organisation of Iran, regardless of the control status).
- Restrictions on the activities of named individuals, companies or organisations. For example they may require states to refuse visas (travel ban); freeze assets located in states' jurisdictions; prohibit trading with those individuals.

When a country is subject to a full-scope arms embargo, a licence is needed for items which are not on the Dual Use list but which would be used for the development, production, use or maintenance of items on the military lists of Member States[17].

Institutions should keep up to date on sanctions by visiting the following page on the gov.uk website: https://www.gov.uk/sanctions-embargoes-and-restrictions (accessed 27/03/2015). (The ECO does not always publish changes to this information through its Notices to Exporters.) HM Treasury publishes information about financial sanctions[18].

[17] EU Dual Use Regulation No 428/2009 Article 4 (2)

[18] Interested parties can register for email alerts at http://engage.hm-treasury.gov.uk/fin-sanc-subscribe/. See also: https://www.gov.uk/government/collections/financial-sanctions-regime-specific-consolidated-lists-and-releases; and https://www.gov.uk/government/publications/financial-sanctions-faqs Both accessed 27/03/2015)

3. De-control (Exemptions)

3.1 The Exemptions (not applicable to End Use or Sanction Controls)

Software and technology (but not goods), which are listed on the UK Consolidated Lists may be decontrolled in accordance with the provisions in Article 18 of the Export Control Order 2008.[19]

The specific de-controls relevant to academic researchers are:

- Information already in the public domain (e.g. the typical contents of an undergraduate-level degree course).
- Dissemination of basic scientific research (i.e. at a theoretical not applied level).
- The minimum information necessary for a patent application.

The case studies in Section 6 of this Guide examine these principles in operation. It should be noted however that when end use controls apply, these will take precedence over decontrols.

3.2 Meaning of Public Domain

The term "in the public domain" is defined in the Export Control Order 2008 as: "*available without restriction upon further dissemination (no account being taken of restrictions arising solely from copyright)*".

To be "in the public domain" the information, technology, research or technology has to be freely available.

NOT to be "in the public domain" could mean the item, information, technology or research:

- needs to be bought from a supplier who controls the supply;
- requires registration;
- is restricted for access by certain people only; or
- is subject to Government and Ministry of Defence security classifications (e.g. commercially confidential information, Official Secrets Act, etc.).

As an example, inclusion of information in a book, website or exhibition would be considered as "public domain" but where there is restricted access (e.g. if registration is needed to access the website where the information is displayed), the item would no longer be in the "public domain".

3.3 Definition of "Basic scientific research"

The term "basic scientific research" is defined as "experimental or theoretical work undertaken principally to acquire knowledge of the fundamental principles or phenomena or

[19] Export Control Order 2008 Regulation 18. (See also bullets 1&2 of para 3 of ECO Guidance on Export Control Legislation for academics and researchers in the UK 2010 available online at: https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/68680/Guidance_on_Export_Control_Legislation_for_academics_and_researchers_in_the_UK.pdf (accessed 27/03/2015)

observable facts and not primarily directed towards a specific practical aim or objective" (see article 18(3) of the Export Control Order 2008).

Note the distinction:-

- the research exemption concerns the "fundamental principles of phenomena or observable facts"
- as distinct from work "focused on a specific practical aim or objective".

3.4 Applying the Decontrols

It should be noted that simply deciding to publish does not trigger the decontrols or avoid the need to seek a licence. The need to apply for a licence should not be assumed too easily not to apply, as a case in the City of Harlem demonstrates[20]. The technology under discussion concerned changes to the DNA sequence of SARS, which was of utility to a terrorist group. Under protest a Dutch researcher applied for and obtained an export licence to enable publication. However he also took the point to court and challenged the right of the Dutch Export Control Organisation to insist that publication amounted to export, which was subject to a licensing requirement. The court held that the basic scientific research and public domain decontrols did not apply and that there was a licensing requirement. The matter is currently on appeal to the Dutch Court of Appeal[21].

In addition to the requirements of Export Control laws the societal implications of research and its publication may also need to be considered (for example in relation to research ethics and integrity)[22].

3.5 WMD End use control and exemptions?

WMD End Use Controls will take precedence over the de-controls and exemptions. Where activity could be exempt from Export Controls either as basic scientific research or under the public domain exemption, if this activity in question is likely to fall within the WMD End Use Controls, these will, in effect, take priority over the exemption and apply instead.

If the technology is on the UK Consolidated Lists and an exemption applies, no licence is needed. However if you have been informed, or are aware or suspect WMD end use, the item is still controlled and a licence may be required for export.

[20] Case Number: AWB 13/792

[21] Dr. Fouchier's publication of his H5N1 research. See http://fas.org/sgp/crs/secrecy/R42606.pdf and http://news.sciencemag.org/health/2013/09/flu-researcher-ron-fouchier-loses-legal-fight-over-h5n1-studies (accessed 27/03/2015).

[22] See for example the Royal Academy of Engineering Nanocode (details available online at: http://www.nanoandme.org/downloads/The%20Responsible%20Nano%20Code.pdf) and the European Commission's Code for Responsible Nanosciences and Nanotechnology Research (Details available online at: http://ec.europa.eu/research/science-society/document_library/pdf_06/nanocode-apr09_en.pdf) (both accessed 27/03/2015).

4. Licensing and enforcement

The licensing process provides a mechanism to protect academia from inadvertent involvement with activities that pose a threat to international peace and security. It is the mechanism through which HM Government can consider the risks associated with an export and, where relevant, authorise the export.

4.1 Types of licence in the UK

The licensing regime provides three types of licence:

- The Open General Export Licence (OGEL) There are many OGELs, each of which cover specific technologies. Where an OGEL has been published, no application for a licence is necessary. Instead users can register to use the OGEL via SPIRE subject to the conditions set out in the licence. This allows a registered user to send the specified goods to the specified countries or to carry out trade activities in relation to certain countries. (There are also open General Trade Licenses in relation to trafficking and brokering activities.)
- The Standard Individual Export Licence (SIEL). The exporter can apply for an export licence in which they specify both the goods and the destination. It carries on for a period – usually 2 years. The licence can only be used for the destination specified and up to a maximum quantity. This would enable use for longer term contracts, projects and repeat business within the duration of the SIEL. The target for issuing a SIEL is 20 working days
- Open Individual Export Licence (OIEL). The exporter can apply for an export licence in which they specify both the goods and the destination or destinations. The licence can cover multiple shipments and destinations and is often used to cover research collaboration and the provision of technical assistance. The target for issuing an OIEL is 60 working days.

For completeness, note also that EU general licences were recently introduced to harmonise practice across Europe. They are an alternative to OGEL but do not have to be used.

4.2 Enforcement

A breach of UK Export Controls is a criminal offence. Nonetheless, such a breach may not result in a criminal prosecution: administrative penalties (compound penalties) may be used to deal with accidental non-compliance followed by a voluntary disclosure to HMRC of the inadvertent breach. These are civil and not criminal penalties.

However where technology is knowingly exported without a licence where one is required, then the question of full criminal enforcement arises. The criminal penalties for a clear breach of Export Controls can range from an unlimited fine and/or a prison sentence of up to a maximum of 10 years.

5. The Academic Technology Approval Scheme (ATAS)

5.1 Overview

The Academic Technology Approval Scheme is operated by the Foreign and Commonwealth Office (FCO). This is a scheme that is designed to help prevent the spread of knowledge and skills that could be used in the proliferation of WMD and their means of delivery through advanced education. Similar schemes are operated by other governments worldwide.

The ATAS is designed to ensure that people who are applying to study certain subjects in the UK do not have existing links to WMD programmes. It applies only to tier 4 applicants. The scheme requires that a student applying for particular subjects of study in the UK is required to apply for an ATAS certificate before applying for a student visa or extension.

Students who are not nationals of the UK, EEA or Switzerland may need to apply for ATAS certificates when studying towards any of the courses listed below in Section 7.7.

It is the responsibility of universities to ensure that no student is enrolled on any course listed in section 7.7 unless they have received an ATAS certificate from the FCO for the specified course or verified that the student is exempt by inspecting documents that prove nationality. Failure to do so could result in the university's loss of ability to sponsor visas.

ATAS and Export Controls: In general terms the ATAS scheme focuses on those who come to the UK, whereas Export Controls focus on what leaves the UK.

5.2 How does the process work?

The UK Border Agency will not issue visas for students to study on eligible courses until an ATAS certificate has been issued. Students must therefore apply for an ATAS certificate after receiving offers for a place at university and before making arrangements to travel to the UK (including application for a visa). The FCO aims to process ATAS applications within 20 working days.

6. Case studies[23]

6.1 Nuclear Research

This case study is provided as an example of how Export Controls can affect nuclear research conducted by universities. It includes examples of decontrols and of WMD end use controls. It also covers ATAS issues.

Scenario

A UK University has a nuclear science department that is conducting research into nuclear fuel cladding materials for use in nuclear reactors. The research is funded from a variety of sources with fundamental research being funded by the Research Councils and applied research being funded by specific clients. One client in particular is relevant in this case – a Japanese nuclear fuels company that has commissioned the university to conduct analysis on a fuel and cladding combination that the firm will use in its next reactor project. The client requires that the results of the applied research is not made public and requires that a sample of the material be sent to Japan for verification. The Research Council requires that the results of the work it funds be made openly available.

The principal investigator is also a lecturer and PhD supervisor. He wishes to use some of the results in one of his lectures and to sponsor one PhD student to undertake the research into the materials as part of the project. Two individuals were selected at interview. One was a former masters student at the university, but is an Iranian national. The second is from Japan.

A research institute in Iran has also expressed interest in working with the research staff in the development of a novel fuel cladding for an indigenous Iranian reactor.

The principal investigator first addressed the “four questions” (see Appendix A below). He found affirmative answers to several of the questions and so has sought input from the university’s export control point of contact.

Export Control Issues

Control Status

The fact that the activity concerns nuclear technology does not, on its own, mean that Export Controls are applicable, but it is a strong indicator that they may be: category 0 of the UK Consolidated Lists contain a wide variety of nuclear equipment. Category 0 E controls ‘technology’ associated with each of the items controlled under category 0Af. As fuel cladding materials are listed in 0A001f, it is likely that the goods, and because of 0E, any related technology would be subject to control should the university wish to export the technology.

This said, there are two decontrols that could apply.

- Public Domain decontrol: This decontrol exempts goods, software and technology from control when the information is already in the public domain. In this case it is perhaps unlikely that the public domain decontrol would be applicable because the object of the research is to categorise materials.

[23] These case studies are provided in order to illustrate the types of considerations that apply in relation to the typical activities conducted at universities.

- Basic Scientific Research: as the research conducted for the Research Council is for the purposes of understanding fundamental phenomena (e.g. the effect of radiation on zirconium), an argument can be made for the BSR decontrol to be applicable. However, this does not extend to the research to be conducted for the client, which should be considered 'applied research' as the client has a specific need for the material for a project.

The export of the samples to Japan also falls within the scope of control. Export of the results of the analysis to Japan would also fall within the scope of control as it is 'technology' related to a controlled item. The decontrols are unlikely to apply as the research was conducted for a specific client who restricts its dissemination. (i.e. it is neither basic scientific research nor in the public domain). Note, however, that the aspects of the project conducted for the Research Councils would probably meet both criteria for decontrol.

Iranian Aspect

The potential collaboration with the Iranian university presents several challenges. First, it is clear that the joint research would relate to controlled technologies, as nuclear fuel cladding is controlled. Second, it appears that the basic scientific research decontrol would not apply as the research relates to an applied purpose; "development of a novel fuel cladding for an indigenous Iranian reactor". Third, Iran[24] is subject to UN sanctions, which includes a prohibition on imports and export of nuclear technology. Therefore, from the information that is available, it appears that a licence would be required and that this licence could not be granted because of the UN sanctions.

It should be noted, however, that UN sanctions include an exclusion for light water reactors. Through this exemption, Russia currently supplies fuel to the Bushehr reactor in Iran. It would therefore be possible, in theory at least, to ask the UN's Iran sanctions committee to consider whether such a transfer could take place under the exemption. Even if the committee consented, it is perhaps unlikely that a western government would issue a licence for the export. However, this example does illustrate the importance of reading relevant sanctions resolutions to understand their implications and limitations.

WMD End Use Controls

The end use control can make the transfer of any good, software or technology licensable when the exporter knows, has been informed, or in some cases, suspects that they will be used for a WMD end use. Knowing that one of the researchers was from Iran and that Iran is subject to sanctions because of its nuclear program would not normally be sufficient grounds on its own to constitute 'suspicion' of a WMD end use. However, if the institution had been informed by the government or if the principal investigator knew through other means that he intended to apply the knowledge in support of Iran's nuclear program then action is needed; a licence would then be required even if the study took place in the UK.

ATAS Issues

ATAS requires post-graduate research students in certain disciplines to apply for certificates before applying for visas. In this case, both students would require certificates as they are from countries that are outside the EEA and are studying toward a research degree in the field of nuclear science (see table in section 7.7(c)).

[24] At the time of writing, March 2015

ATAS is a pre-visa check. Therefore the university should inform the individuals of the need to get a certificate in the offer letter and ensure that the individual is in possession of a valid visa prior to enrolling him or her on the programme of study.

In this case, it is unlikely that the Iranian individual would be granted a certificate as he is from a country that is subject to UN WMD-related sanctions as many of the courses have a strong relevance to the WMD disciplines. That said, it would depend on the scope of UN sanctions as to whether a certificate for a particular course could be issued: UN sanctions on Iran do not extend to the biological or chemical domain, for example, meaning that an Iranian student applying to study a course in the biological sciences could, in theory at least, be granted a certificate.

6.2 Nano technology case study

Scenario

Some high strength fibres, including potentially some carbon nano-tube fibres, have applications in high-speed gas centrifuges or other composite materials with military applications. Some carbon nanotube material may also have unusual electromagnetic absorption properties.

Export Control Issues

Technical details ("technology") which are required for the development, production or use of goods, material or software (items) controlled under the control lists are controlled and may not be exported without a licence per the Export Control requirements. 'Controlled' means listed on the UK Strategic Export Control Lists maintained by the ECO.

If Dual-Use goods, material, software or the required technology is listed on Annex IV of the EU Dual-Use regulation (electromagnetic absorption of materials, and fissile materials for example), then it may not be exported outside the UK without a licence, even within the EU. This would affect reporting to the EU Commission.

The 'required technology' aspect is a critical test: "Required" refers to the portion of the technology which is peculiarly responsible for achieving or exceeding the control performance levels, characteristics of functions of controlled goods and software. Thus although the parameters in the lists are clear for goods, material or software, the problematic question is: what is the actual technical information, "the technology", that is to be exported? It may fall within the particular parameters but not amount to unpublished technical information which is required for "development, production or use". In many cases this requires a detailed discussion with the ECO. Indeed it may not be possible for the ECO to give a view until it sees the detail of the material to be published. If there is a risk that the technology is required technology for the development production or use of controlled goods, the only sure defence against prosecution is to apply for an export licence

If technology is in the public domain it is de-controlled. However additional unpublished technology which is required for the development, production or use of controlled items cannot be exported. Moreover, even if the information is in the public domain, it could not be

provided where the exporter had been informed by ECO (or had otherwise been told, or had reasonable grounds to suspect) that the information would be going to a WMD programme.

Researchers need to be aware of the *need for responsible publication*. Note that publishing information may amount to export. There have been cases, such as a current case in the Netherlands[25], where the national export control organisation required an export licence for publication. A project report of 'required technology' which went beyond published material could not be exported without going through compliance with Export Control requirements.

Where controlled information is given to a UK entity the directors should be reminded that any technology required for the development, production or use of controlled items may not be exported outside the UK without a licence unless it is already in the public domain; and that any information on Annex IV of the Dual Use list (for example about electromagnetic absorption properties of materials) may not be exported outside the UK without a licence.

Collaborators outside the EU: Whilst some non EU countries may have a special status in relation to participation in EU funding and may be regarded as a low risk country, this does not override the Export Control requirements set out above. A number of considerations will affect whether an export licence would be granted, for example concerns over WMD proliferation, access to advance military capabilities or potential for human rights abuses.

[25] See section 3.4

B. IMPLEMENTATION

7. Implementing non-proliferation controls in universities

Universities, like companies, can be liable if staff breach exports control obligations. Therefore universities need to consider how to implement these controls so that its personnel understand the controls and do not fall foul of them. The tools set out in Appendices A and B are offered to assist implementation.

7.1 Apply the Export Control Framework

Universities need to consider what are the main areas within their institutions which are affected by Export Controls and what this means in practice for the academic community. The guidance on Export Controls in section 2 and 3 are designed to help institutions understand how the legislation applies to their activities. Universities will need to work with researchers where there is a proliferation risk to understand and manage the implications of the UK Consolidated Lists and WMD End Use Controls for research and teaching activity.

7.2 What kind of activities are of highest concern?

Universities need to consider in particular what steps are needed in respect of engineering and scientific disciplines. There is a need to be particularly alert when working with parties from certain countries which are either subject to arms embargoes or, more commonly, when there are concerns about their maintenance of WMD. (See the countries of concern page on the Alpha website: https://www.acsss.info/country-profiles accessed 27/03/2015).

Export Control should be considered when undertaking any research activity or collaboration with a clear military aspect or link or where there is nuclear or biological research taking place that, in the wrong hands, could prove useful in the production of WMD. Export Controls may also apply when sending equipment overseas for research purposes or engaging in research collaborations or teaching with persons or organisations in third countries.

The UK government considers WMD to include the following:

- Nuclear weapons programmes and nominally civil nuclear programmes suspected of being intended to support nuclear weapons ambitions
- Biological weapons
- Chemical weapons
- Ballistic and cruise missiles etc. (because of their potential use in delivering the above weapons). This includes unmanned large aerial vehicles, space launch vehicles and sounding rockets.

Note: The UK has also invoked WMD end-use controls in relation to exports or technical assistance (i.e. consultancy) which could support activities in the facilities which house these programmes even if the technology is itself ubiquitous.

7.3 Which disciplines are likely to be most affected?

Export control legislation – in theory – could affect academics and researchers in a wide range of subject disciplines. In practice, science and engineering disciplines are most commonly affected, since the knowledge and research conducted in these disciplines can directly lead to the advancement of programmes of concern. With this in mind this table highlights some of the key risk disciplines:

	Nuclear weapons	Chemical	Biological	Ballistic Missile	Facilities
Nuclear engineering	X				
Chemistry	X	X	X	X	
Biological science		X	X	X	
Materials technology (High strength aluminium, carbon fibre, high nickel content steels, and concretes)	X			X	X
Rocket technology				X	
Navigation systems				X	
Avionics				X	
Automation and control	X			X	X
Vacuum systems	X			X	X

Generally, if the technology is in an ATAS controlled area; the end use controls also need to be considered. See the table in section 7.7(c)

7.4 Export Control Implementation

Compliance obligations are shared between universities and individual academics. In general, universities are responsible for implementing compliance measures across their institutions, and providing guidance to and raising awareness among staff. Staff are responsible for complying with the controls in respect of the export of research results and materials they produce. This is of increasing importance as global proliferation and security risks increase, and universities engage more frequently in international collaboration and outreach, and establish campuses and projects abroad.

Universities should consider the following practical steps:

a) Ensure SPIRE registration so that licence applications and queries can be submitted[26].

b) Prepare and publish locally a policy or statement and guidance on Export Controls and non-proliferation. This could form part of the University's Code of Research Conduct. Such actions would contribute towards an institution's implementation of the Concordat to support Research Integrity.

c) Provide clear sources of advice and mechanisms so that researchers are made aware of the policy and legal requirements, for example when processing grant applications.

d) In particular ensure that any researchers working in any of the disciplines that could be targeted by would-be proliferators are aware of export control obligations.

e) Consider how to make the advice and guidance available at an early stage, for example within departments, within support services which assist with application for grants and research contracts, and/or within any tech transfer company which commercialises university IP. The guidance should include:

   - The Export Control Decision Tree ;
   - Links to this Guide;
   - Links to the Export Control pages on the gov.uk website: https://www.gov.uk/government/organisations/export-control-organisation (accessed 27/03/2015).

f) Monitor the Export Control Organisation's Notices to Exporters email, Twitter or RSS Feed notifications and the FCO's quarterly ATAS update and details of sanctions, against countries or individuals; and publish relevant information locally.

g) Provide a clear point of contact within the admissions / student records hierarchy for any ATAS-related enquiries.

h) Ensure that academic departments apply the appropriate JACS code to both taught courses and postgraduate research.

i) Include Export Control regulations and ATAS in training as appropriate for administrators. Consider training some staff on the ECO EC Checker and also using the KCL Alpha Project free training material: www.acsss.info (accessed 27/3/2015).

7.5 The Tool Kit: The Export Control Decision Tree: Flow Charts, Questions, Red Flags

The suggested components for a tool kit are set out in Appendix A. They aim to help the university community assess whether their activities might be caught by these controls.

Appendix B includes two flow charts. The first might be used to help raise basic awareness. The second links and cross references to the Tool Kit Decision Tree in Appendix A. The

[26] All enquiries and licence applications need to be made online via SPIRE, the ECO's export licensing database available at: https://www.spire.bis.gov.uk (accessed 27/03/2015)

Decision tree also includes reference to US export control requirements which, although outside the scope of this Guide, should not be overlooked (See Appendix H).

7.6 Applying for a Licence and Enforcement

Whatever type of licence is used, the application needs to address all types of potential knowledge transfer, including post-graduate teaching, papers at conferences, collaboration with academics in other countries etc.

The ECO and/or possibly HMRC will audit the operation of any licence which has been granted. Record keeping is very important when using open licences. The university or research institution may also be asked, as part of the audit, to explain how they ensure compliance with exports of intangible technologies (e.g. through email or other electronic transfer).

An institution could register for an Open General Licence. The ECO will monitor open licences. Record keeping is particularly important - all export instances have to be recorded. Being licensed under an Open General Licence also means that the institution will need to maintain central direction, monitoring and record keeping.

Criminal Liability could operate at two levels:

- Institutions: those responsible for overseeing the management of the institution need to ensure they have adequate procedures in place so that researchers are aware of and directed to comply with export control legislation. Failure to do so could result in criminal liability.
- Individuals: If an individual researcher did not follow those procedures that researcher may be liable to criminal prosecution.

7.7 ATAS Implementation

What is the role of universities?

- Correctly assign the appropriate Joint Academic Coding System (JACS) code to all courses[27]
- Inform students of the ATAS certificate requirement when sending offer letters, and include on the offer letter the following information:
- Course title and list of compulsory or optional modules
- JACS Code
- Instructions for ATAS application
- Verify that an ATAS Certificate is held before enrolling an ATAS-eligible student on any course that follows
- Ensure that a new certificate has been issued if the student asks to change course or to transfer to another university.

[27] JACS codes are used by the Higher Education Statistics Agency (HESA) and the Universities and Colleges Admissions Service (UCAS) to classify academic courses.

Implementation in practice

ATAS is a pre-visa vetting scheme: the onus is on the student, with guidance from the university, to apply for an ATAS certificate before applying for the visa.

Student records systems should provide the basis for ATAS implementation. This means that academic departments must correctly assign JACS codes to courses.

Student records systems must highlight to admissions and compliance staff all applications by ATAS-eligible students to ATAS-related courses.

All offer letters from the institution must state whether there is any any ATAS requirement associated with the course of study and include the course title, JACS code, and module list. The student records/admission systems should prevent course registration until confirmation that an ATAS certificate has been obtained and the details added to the student's record.

Students should then apply for a certificate via the FCO website. After this is granted, the student can then apply for the visa.

Upon arrival at university the student should be required to provide both certificate and visa to the university. Universities need to keep records of both the certificates and the visas and ensure that ATAS-eligible students cannot change course or university or extend study unless an updated ATAS certificate has been received.

Which courses require ATAS certification - JACS code?

Taught Courses

Engineering and Sciences, with JACS codes beginning:

- F2 – Materials Science
- F3 – Physics (including Nuclear Physics)
- H3 – Mechanical Engineering
- H4 – Aerospace Engineering
- H8 – Chemical, Process and Energy Engineering
- J5 – Materials Technology not otherwise specified.

Research Based Courses

Subjects allied to Medicine with JACS codes beginning: • B1 – Anatomy, Physiology and Pathology • B2 – Pharmacology, Toxicology and Pharmacy • B9 – Others in subjects allied to Medicine	Biological Sciences with JACS codes beginning: • C1 – Biology • C2 – Botany • C4 – Genetics • C5 – Microbiology • C7 – Molecular Biology, Biophysics and Biochemistry • C9 – Others in Biological Sciences
Veterinary sciences, agriculture and related subjects with JACS codes beginning: • D3 – Animal Science • D9 – Others in Veterinary Sciences,	Physical Sciences with JACS codes beginning: • F1 – Chemistry • F2 – Materials Science • F3 – Physics

Agriculture and related subjects	• F5 – Astronomy • F8 – Physical Geographical Sciences • F9 – Others in Physical Sciences
Mathematical and Computer Sciences with JACS codes beginning: • G0 – Mathematical and Computer Sciences • G1 – Mathematics • G2 – Operational Research • G4 – Computer Science • G7 – Artificial Intelligence • G9 – Others in Mathematical and Computing Sciences	Engineering with JACS codes beginning: • H1 – General Engineering • H2 – Civil Engineering • H3 – Mechanical Engineering • H4 – Aerospace Engineering • H5 – Naval Architecture • H6 – Electronic and Electrical Engineering • H7 – Production and Manufacturing Engineering • H8 – Chemical, Process and Energy Engineering • H9 – Others in Engineering
Computer Sciences with JACS codes beginning: • I1 – Computer Science • I4 – Artificial Intelligence • I9 – Others in Computer Science	Technologies with JACS codes beginning: • J2 – Metallurgy • J4 – Polymers and Textiles • J5 – Materials Technology not otherwise specified • J7 – Industrial Biotechnology • J9 – Others in Technology

8. Further Information about the ECO

The ECO is the UK's licensing authority and it is responsible for assessing and issuing export licences for "strategic" goods. This encompasses both military and so-called "dual-use" goods (which are civilian items with a military purpose). Goods which are controlled by export control legislation cover a wide and varied range of items including electronic transfers of controlled "technology".

The ECO is part of the Department for Business, Innovation and Skills (BIS). It works in conjunction with a number of other government departments, including the Foreign and Commonwealth Office (FCO) and the Ministry of Defence (MOD). The ECO's role is: "to promote global security through strategic Export Controls, facilitating responsible exports".

In practical terms this means that the ECO is responsible for:

- Implementing export control legislation (in the form of the Export Control Order 2008 or the sanction Orders);
- Processing and issuing all export and trade licences;
- Working with all potential customers to ensure compliance and awareness with the legislation.

The Export Control Organisation also provides a number of tools which can be used to establish whether a licence is required and acts as a point of contact for those who are concerned they may inadvertently have become involved in supporting WMD programmes through the export of goods or the sharing of information.

The Export Control Organisation provides further information and guidance on the Export Control pages of the gov.uk website at https://www.gov.uk/government/organisations/export-control-organisation (accessed 27/03/2015). This includes:

- Information on the Rating Enquiry Service and how to self-rate items on the Control Lists;
- Information about the UK Consolidated lists and end-use Controls;
- Details of how to apply for a licence and the different types of licences issued by the ECO;
- Access to the Goods Checker website which is helpful for those wishing to assess if their goods may require an export licence.

Guidance on Export Control Legislation for academics and researchers in the UK https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/68680/Guidance_on_Export_Control_Legislation_for_academics_and_researchers_in_the_UK.pdf (accessed 27/03/2014).

In addition to these services, the ECO runs a regular programme of training and seminars including a workshop on the Checker Tools and Goods Classification and a Beginners Seminar, which provides an introduction to Export Controls.

It is also advisable to sign up to the ECO's email notification service, "Notices to Exporters", which provides updates about changes to legislation, sanctions and other ECO related issues. Signing up can be done through the Department for Business website at https://www.gov.uk/government/organisations/export-control-organisation (accessed 27/03/2014).

For further information on the Rating Enquiry Service and the information required when applying for a licence, or any other general export control related matters, please contact:

ECO Helpline

Export Control Organisation

Department for Business, Innovation and Skills (BIS)

3rd Floor, 1 Victoria Street

SW1H 0ET

Tel: 020 7215 4594

Fax: 020 7215 2635

Email: eco.help@bis.gsi.gov.uk

https://www.gov.uk/government/organisations/export-control-organisation

APPENDICES

Appendix A: THE TOOL KIT

A.1. Decision guide for researchers – introduction

Compliance with Export Controls is a serious obligation but it is manageable. 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: indeed, this is to be encouraged.

However, some knowledge held and activities conducted by academics and researchers do have the potential to be misused. Researchers and universities are therefore required to adhere to legal requirements of export control legislation as would any other individual or company, although certain decontrols exist which exempt many activities conducted in universities from Export Controls.

It is nonetheless important to note that failure to adhere to the requirements of the legislation is a criminal offence involving potential fines, legal costs and prison sentences of up to 10 years.

Briefly, the regime takes a 2 pronged approach:

The technology: Is the equipment, materials or know-how on the UK controlled list of military or dual use items?

- What is it? Could it be used for military purposes in any way?
- Is it to be transferred out of the UK physically (e.g. shipping equipment or despatching materials) or otherwise (e.g. teaching or collaboration)?

The recipient: Might the technology, even though not listed, be used for

- military purposes by a country subject to sanctions or
- WMD, namely for chemical, biological or nuclear weapons or other nuclear explosive devices or means for their delivery?

Note that ATAS, which controls access by students from abroad to courses which might be relevant to non-proliferation objectives, runs in parallel to export control legislation. Complying with ATAS 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.

A.2. The Decision Tree

A Decision Tree adapted for local circumstances would help academics make an initial assessment about whether the rules apply and what needs to be done. An institution's decision tree might be along the following lines:

If you answer “yes” to any of the following questions, take advice:-

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 ITAR or EAR this may affect exporting and also sharing with researchers within the institution who are from overseas or have dual nationality. These rules need to be satisfied, as well as UK export control requirements.

But 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 inside or outside the Department whether in the UK or abroad?

Question 2) The Technology:

The primary question that must be answered is whether it appears on the Export Control list. The ECO 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:

Firstly: Is the item or technology specifically designed for military or nuclear end uses?

Secondly: Does the export include encryption software or hardware?

Finally: Do you need to check the UK controlled list 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 EU, 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 support any military related research (e.g. a defence ministry)?

Question 3) End use controls: Who 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 Consolidated Lists, 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 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.

Are there diversionary concerns in relation to any of the parties?

Is the stated end-use credible - bearing in mind that a credible end-use will not necessarily preclude a risk of actual use in connection with WMD?

Are these goods that could be used in the development of the WMD infrastructure?

Are there WMD research and development programmes at universities?

Are there unsafeguarded civil nuclear reactors - where a risk of diversion of fissile material exists?

Is this a civil space programme which may also be involved in ballistic missile development?

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 Consolidated Lists 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 ECO.

A.3. 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 Consolidated Lists need to be checked.

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.

Does the activity raise any WMD end use control concerns?

Red Flags – WMD End Use Concerns

Is the partner reluctant to offer information about the end-use of the items?

Has the partner asked that the goods be transferred to a forwarding address in the UK?

Are unusual shipping, packaging or labelling arrangements requested?

Is the partner new to you and is your knowledge about them incomplete?

Is the partner located in an area under strict security control or in an area to which access is severely restricted, or which is unusual in view of the type of equipment being installed?

Are there unusual requirements for excessive confidentiality about final destinations, or customers, or specifications of items?

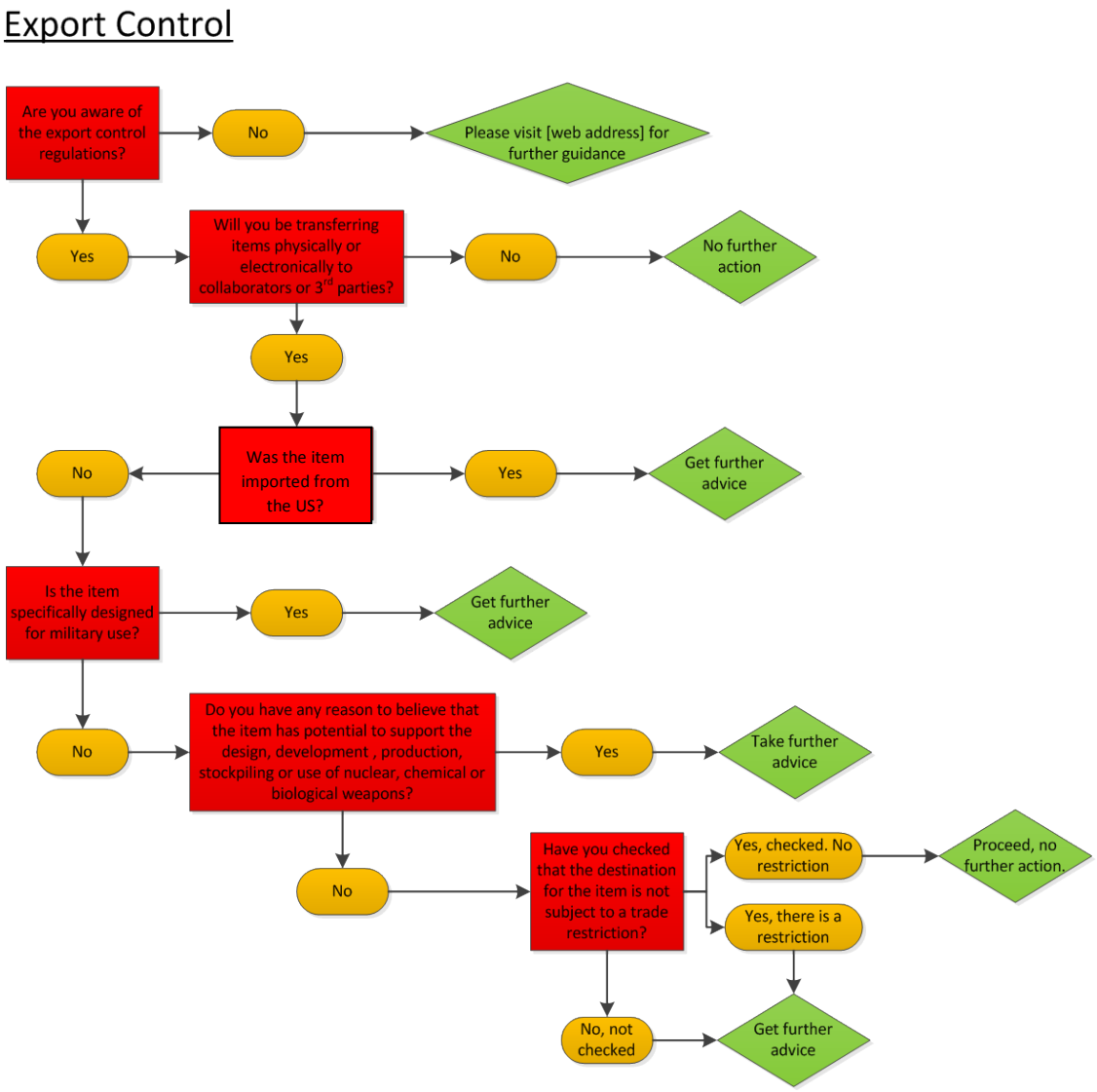
Is the partner or end user a military or government research body?

Is the project requested unusual in any way, e.g. the quantity or performance capabilities of the goods significantly exceed, without satisfactory explanation, the amount or performance normally required for the stated end use?

Appendix B: Export Control Flow Charts: Getting Started

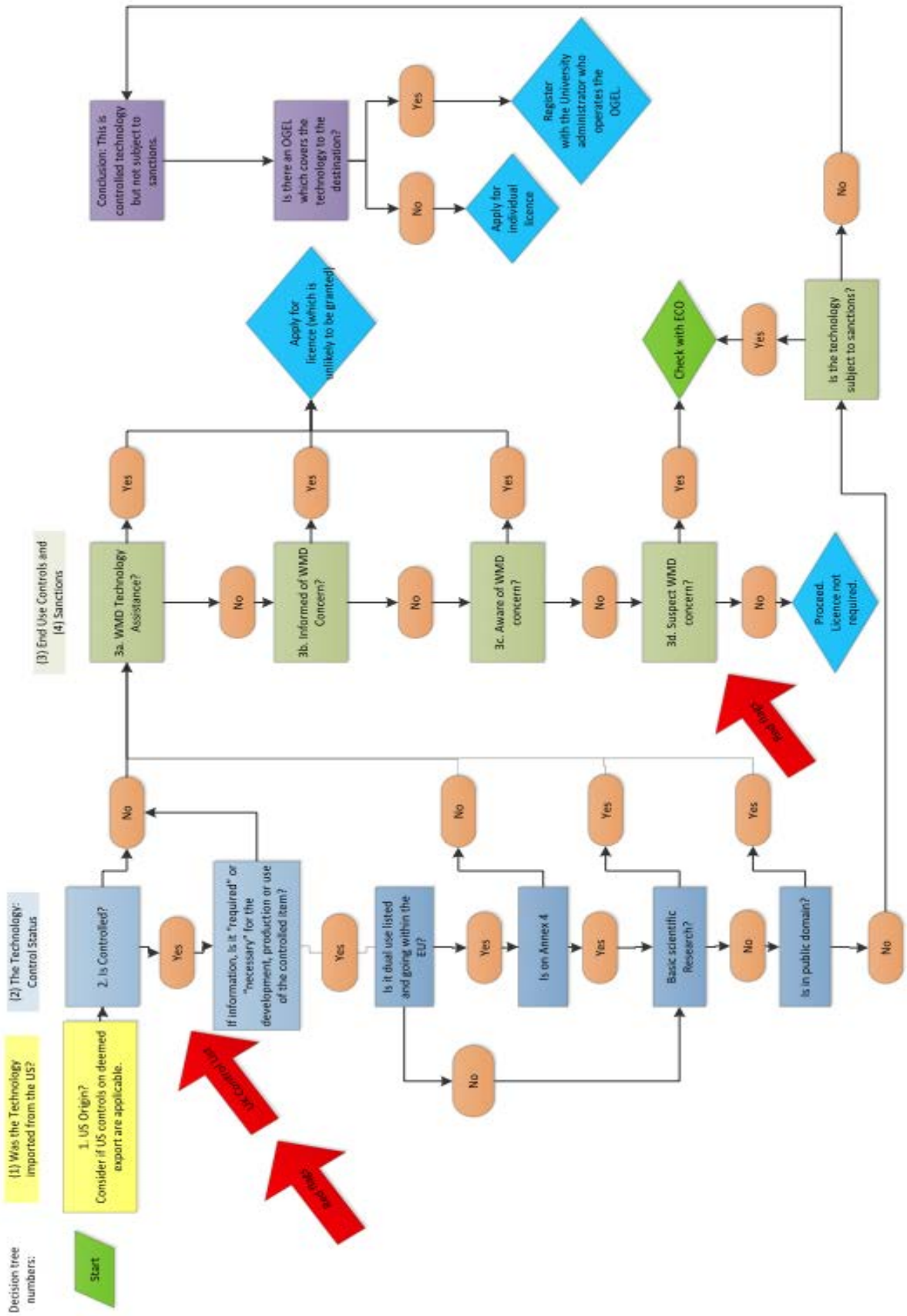
Two flow charts are offered:

1. 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.)



2. When do the UK Consolidated Lists need to be considered? This second flow chart on the following page 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.


Decision tree numbers:
Start
(1) Was the Technology imported from the US?
1. US Origin?
Consider if US controls on deemed export are applicable.
(2) The Technology: Control Status
2. Is Controlled?
Yes
No
If information, is it "required" or "necessary" for the development, production or use of the controlled item?
Yes
No
Use Control List
Dual Use
Is it dual use listed and going within the EU?
Yes
No
Is on Annex 4
Yes
No
Basic scientific Research?
Yes
No
Is in public domain?
Yes
No
(3) End Use Controls and (4) Sanctions
3a. WMD Technology Assistance?
Yes
No
3b. Informed of WMD Concern?
Yes
No
3c. Aware of WMD concern?
Yes
No
3d. Suspect WMD concern?
Yes
No
Apply for licence (which is unlikely to be granted)
Check with ECO
Yes
Is the technology subject to sanctions?
Yes
No
Proceed. Licence not required.
Dual use
Conclusion: This is controlled technology but not subject to sanctions.
Is there an OGEL which covers the technology to the destination?
Yes
No
Register with the University administrator who operates the OGEL
Apply for individual licence

Appendix C: Non-proliferation legislation - overview

The Structure of the Military and Dual Use Lists:

C.1. Military List

This is a summary only – consult the full list

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 therefor; 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

C.2. Dual List

This is a summary only – consult the full list.

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

C.3. 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 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 Iran and North Korea, which at the time of writing were subject to UN sanctions.

C.4. Export Controls

Responsibility for implementing and managing Export Controls within the UK falls under the remit of the Export Control Organisation (ECO) within the Department for Business Innovation and Skills (BIS). 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 ECO may be required to carry out an activity; failure to obtain one could result in a criminal offence being committed.

C.5. 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 understood.
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 concern.
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 obligations.
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 systems. 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[28].
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 practices. Therefore, likeminded states will not issue licences for the export of strategic goods in those circumstances.

[28] The United States, for example recently prosecuted a professor at Texas A&M for exporting technology to China in breach of US Export Controls. See www.acsss.info for more information on that case.

Appendix D: Legislative Background

The transcript of the House of Lords included below provides a helpful explanation on how to interpret the expressions “being aware” or “being informed” in the context of end-use controls. The legal provisions to which the transcript refers consist of end-use controls specified in the legislation which preceded (and was replaced) by the Export Control Order 2008. However, those end-use controls have been reproduced in a similar form by articles 10 to 12 of the Export Control Order 2008 and accordingly, the explanation in this transcript remains relevant.

Transcript of Lord Sainsbury’s remarks on Articles 8, 9 and 10 of the Export of Goods, Transfer of Technology and Provision of Technical Assistance (Control) Order 2003 during a House of Lords debate 16 December 2003 (Official Report, 16 Dec 2003: Column 1089-1090).

I will now give the House a clear explanation of the Government's position in answer to questions about the drafting of Articles 8 and 9 of the order. Article 8(1) contains the prohibition on the electronic transfer of software or technology. The article prohibits the transfer without licence of software or technology to a person or place in the United Kingdom, if the transferor has been informed by the Secretary of State that such software or technology is or may be intended, in its entirety or in part, for a relevant use; or if he is aware that it is intended for a relevant use, and he has reason to believe that it may be used outside the European Community. The phrase "any relevant use" is defined in Article 2. The definition follows the definition in the EC dual-use regulation and broadly covers usage in connection with weapons of mass destruction programmes.

For the test in Article 8(1) to be satisfied, the transferor must first either be informed by the Secretary of State or be aware that the software or technology is intended for a relevant use. For the "aware" part of the test to be met, there must be a realistic prospect that the person who has the intention to use the software or technology for a relevant purpose will be in receipt of the software or technology. The possible intention of an entirely unconnected person is not relevant.

That, however, is not the end of the story. The transferor must also have reason to believe that a relevant use will take place, outside the EC. That does not mean that there is a theoretical possibility that it may be used outside the EC, a condition which, of course, may logically be satisfied in every case. Rather, there must be a positive reason for the belief on the part of the transferor. Article 8(5) confirms that by stating that, for the purposes of Article 8(1), a person has reason to believe that software or technology may be used outside the EC, if he knows that it may be, or is intended to be, so used, or if he has been informed by the Secretary of State that it is intended to be so used. If the constituent parts of that test are met, the transferor must apply for a licence before the transfer is made.

Article 9(3) contains the mirror provision to Article 8(1) in respect of

- The non-electronic transfer of software and technology. For the avoidance of doubt, the comments that I made about the interpretation of Article 8(1) apply equally to the interpretation of Article 9(3).
- The wording of Article 10 is deliberately different from that in Articles 8 and 9, but the "is aware" test is the same as for those articles. A person may be "aware" only if he knows that he has goods intended for a relevant use.

- The noble Baroness also raised a constitutional point. The new controls have been carefully framed to respect activities that fall under certain protected freedoms described in Section 8 of the Export Control Act 2002; namely, communicating or making information generally available to the public and communicating information in the ordinary course of scientific research. The Secretary of State may regulate such activity, if interference is necessary and no more than necessary, as determined by her in accordance with Section 8(2), and she considers that the new controls imposed by Articles 8 and 9 of the order are necessary.

Section 8 of the Export Control Act 2002, 'Protection of Certain Freedoms'

Section 8 of the Act places limitations on the power of the Secretary of State to make any control order which has the effect of prohibiting or regulating certain protected freedoms. Any interference in these protected freedoms must be no more than is strictly necessary. The question of necessity shall be determined by the Secretary of State. The Secretary of State has complied with this provision in making the Export Control Order 2008.

In practice, this means that the controls have been carefully framed to respect protected freedoms. Whilst the Secretary of State can make a control order affecting the freedom to continue with such activities if this is deemed necessary, for example due to international obligations and commitments undertaken by the United Kingdom, Section 8 also requires that any control must be no more than necessary. In order to be consistent with the requirements of Section 8, any new order made under the Export Control Act 2002 must balance requirements both to control the activity and to respect the freedom to carry on that activity.

Section 8 Protection of Certain Freedoms

The Secretary of State may not make a control order which has the effect of prohibiting or regulating any of the following activities:

- Communication of information in the ordinary course of scientific research;
- The making of information generally available to the public; or
- The communication of information that is generally available to the public, unless the interference by the order in the freedom to carry on the activity in question is necessary (and no more than is necessary).

The question of whether any such interference is necessary shall be determined by the Secretary of State by reference to the circumstances prevailing at the time that the order is made. The decision of the Secretary of State will also reflect consideration of the reasons for seeking to control the activity in question and the need to respect the freedom to carry on that activity.

Appendix E: End-use controls in legislation

The key End-Use Control is in the EU Dual-Use Regulation (Article 4(1), (4)) but this is supplemented by a number of provisions of the Export Control Order 2008 (Articles 6, 7, 8, 10, 11, 12 and 19).

Each of the different provisions has a specific application, controlling different activities and modes of transfer, as well as its own specific test for triggering the WMD end-use control. However, all of these provisions are focused on the same narrow circumstances (i.e. sending goods, software or technology directly or indirectly out of the EU where they are intended for 'WMD purposes').

The following is written only as a guide to the application of the relevant provisions and you should consult the Dual-Use Regulation and the Export Control Order 2008. These are published on the export control pages of the bis.gov.uk website

- Regulation, Article 4(1), (4): Physical export and electronic transfer of goods, technology or software from the EU to a destination outside the EU where you are aware or have been informed by the competent authority (for people operating in the UK, this is usually BIS but can be another Government Department or an overseas Government) that there is a WMD end-use risk.
- 2008 Order, Article 6: Physical export and electronic transfer of goods, technology or software from the UK to a destination outside the EU where you have grounds to suspect that there is a WMD end-use risk (unless, having made all reasonable enquiries, those seeking are export are satisfied there will be no WMD end-use).
- 2008 Order, Article 7: Physical export and electronic transfer of goods, technology or software from the UK to a destination within the EU when the individual is aware or has been informed by the competent authority (in the UK generally BIS) that there is a WMD end-use risk and you know the final destination is outside the EU.
- 2008 Order, article 8: This only applies to physical exports passing, "in transit", through the UK and imposes similar controls to those imposed by Article 4 of the Dual-Use Regulation on general exports.
- 2008 Order, article 10: Electronic transfer or non-electronic transfer (e.g. face-to-face discussions or demonstration, passing course notes hand-to-hand, etc.) of software or technology within the UK when the individual is aware or has been informed by the competent authority (in the UK generally BIS) that there is a WMD end-use risk and that the final destination is outside the EU. This does not apply to software or technology in the public domain.
- 2008 Order, article 11: Electronic transfer or non-electronic transfer of software or technology by a UK individual located outside the EU when that individual is aware or has been informed by the competent authority (in the UK generally BIS) that there is a WMD end-use risk. This only applies when the transfer is to a destination outside the EU or, more broadly, when the individual making the transfer knows or has been informed by the competent authority that the final destination is outside the EU. It does not apply to software or technology in the public domain.

- 2008 Order, article 12: Non-electronic transfer of software or technology from the UK when the individual is aware or has been informed by the competent authority that there is a WMD end-use risk and either the immediate destination is outside the EU or it is known that the final destination is outside the EU. This does not apply to software or technology in the public domain.
- 2008 Order, article 19: Provision of technical assistance directly or indirectly to a person or place outside the EU (e.g. related to repairs, development, manufacture, assembly, testing, use, maintenance or any other technical service), either from the UK or from a place outside the EU. This article applies when the person providing technical assistance:
    - is aware that the subject of this technical assistance is intended, in its entirety or in part, for 'WMD purposes'; or
    - is informed by the competent authority that the subject of this technical assistance is or may be intended, in its entirety or in part, for 'WMD purposes'.

For example, the electronic transfer of listed dual-use navigation technology within the UK could only be controlled under the provision relating to transfers within the UK (Article 10 of the 2008 Order). This only applies if the transferor is aware or has been informed by competent authority that there is a WMD end-use risk and that the final destination is outside the EU (e.g. in the case of a US cruise missile programme).

Appendix F – Legal background to exemptions

Article 4 of the Dual-Use Regulation, and articles 6 to 8 of the 2008 Order which are closely related to it, have no exemptions based on technology or software being "in the public domain" or a transfer being part of "basic scientific research" (terms defined below). Because the Dual-Use Regulation is directly applicable (i.e. it takes effect as UK law without any implementing measures), the scope for adding exemptions is limited.

However, the EU Dual-Use List stipulates that its controls do not apply to technology or software in the public domain or basic scientific research. This means that, for exports or electronic transfers to a destination outside the EU, listed software or technology in the public domain or for basic scientific research is only controlled when there are specific end-use concerns.

Articles 10, 11 and 12 of the 2008 Order implement an EU Council Joint Action (i.e. these provisions do not derive from the Regulation) on technical assistance including oral transfers of technology[29]. These provisions do not apply to information in the public domain. This public domain exemption is appropriate given the wide range of routine activities that are potentially covered by these controls on electronic transfers within the UK and by UK persons outside the EU and on non-electronic transfers. However, the end-use controls in these articles do apply to technology or software for basic scientific research (but only where the technology or software is outside the public domain).

[29] Council Joint Action of 22 June 2000 (2000/401/CFSP) concerning the control of technical assistance related to certain military end-uses.

Appendix G – Glossary of export control terms

ATAS	See section 7 and see the FCO website at http://www.fco.gov.uk
Aware	A WMD intention has been made known to the exporter by HM Government. This is usually through HMRC or the Security Service (MI5). Other means of being made aware could include being told by the importer or end user.
Basic scientific	See section 3.3 research
Dual-Use Goods	Products, goods, software or technology that have NOT been specifically designed for a military use BUT which may have a military or WMD related application
Export	See section 1.2
Informed	An exporter has been notified by the ECO on behalf of the Secretary of State in writing about a potential WMD use
Military Goods	These are generally products, goods, software or technology that has been specifically designed (and in some cases modified) for military use
Public domain	See section 3.2
Strategic Goods	Goods, software or technology relating to security, defence, and foreign policy. This term relates to the controls made by the Export Control Organisation, as distinct from Export Controls on other items such as horticulture, arts and antiques and medicines, which are the responsibility of other government departments
Suspect	Even if nothing explicit has been said to you are there factors which indicate a risk which reasonable enquiries do not allay? • Consider the "Daily Mail" test – if the matter appears on the front of the newspaper, would you feel you should have asked some questions? • There must be a reason to cause suspicion. • The 'suspicion' end-use controls are only triggered by specific reasons. A mere theoretical possibility does not amount to suspicion.
UK Consolidated Lists	Listings of goods and technology combining the UK Military and Paramilitary List, which consists of the UK Military List, UK Security and Human Rights List, Dual-Use List, and UK Radioactive Sources List and EU Dual-Use List.

Appendix H - US Export Control

Note: US Export Controls are beyond the scope of this guide. Nonetheless, one university offered the following contribution while this Guide was being drafted and it has been included for the sake of completeness. Universities affected by US controls should nonetheless refer to guidance issued by US authorities when considering if US controls are applicable.

H.1. Useful links

UK government links:

https://www.gov.uk/government/publications/us-international-traffic-in-arms-regulations-itar-concerning-dual-and-third-country-national-employees-rule-change-q-a

https://www.gov.uk/government/publications/us-international-traffic-in-arms-regulations-itar-concerning-dual-and-third-country-national-employees-august-2011-rule-changes

See also:

http://www.pmddtc.state.gov (Directorate of Defense Trade Controls)

http://www.pmddtc.state.gov/faqs/DCTCN.html

https://www.bis.doc.gov/index.php/policy-guidance/deemed-exports/deemed-reexport-guidance1

https://www.bis.doc.gov/index.php/policy-guidance/deemed-exports/deemed-exports-faqs?view=category&id=114#subcat116

http://www.aueco.org (US Association of University Export Control Officers)

http://www.aueco.org/id10.html

H.2. Summary

The UK's end-use controls do not necessarily work in the same way as similar-sounding 'technology transfer' controls operated by other countries. For instance, in the United States export control decisions are based on both end-use AND end-user. They rely upon automatically controlling the transfer of relevant technology from their citizens to all foreign nationals (so-called "deemed exports"). These controls apply regardless of potential end-use. In comparison, under UK legislation, Export Controls are based on export rather than nationality.

H.3. ITAR

The International Traffic in Arms Regulations (ITAR) regulates commodities, technical data, and defence services identified on the U.S. Munutions List (USML) and goods. It also covers certain sensitive civil technologies.

The U.S. export-controlled commodity remains controlled by the ITAR once exported and re-exports, changes in end-use, etc, remain controlled and subject to U.S. authorization /

permission. On the Department of State side of things, exports of classified defence articles or "significant military equipment" (as identified in the ITAR) require a form DSP-83 "Non-transfer and Use Certificate",
see: https://www.pmddtc.state.gov/licensing/documents/DSP_83.pdf

This requires completion by the UK recipient as well as the US exporter.

H.4. EAR

The Export Administration Regulation (EAR) has always addressed dual use technology and goods, and under the Obama administration's reform agenda, some less sensitive military technologies and goods have been moved to the EAR.

H.5. Allowing access to US technology

US rules[30] on 'deemed export' restrict who can access the technology.

What is access?[31]

Under the Export Administration Regulations (EAR) a foreign person can have access to and manipulate/operate/ utilize EAR controlled items even if the item in question is controlled for export to the individual's home country. However, the rules on deemed re-export would need to be observed before one could release technology (i.e., specific information about a commodity described on the Commerce Control List) to a foreign person. An export of controlled technology can occur even if nothing ever leaves the research lab; the release can occur through, but is not limited to, a demonstration, oral briefing or provision of documents (examples only).

How the deemed and/or re-export rules are addressed for the UK:

Permissions for deemed and/or re-export inside and outside the University: Technology or software falling under the "Technology and software restriction (TSR)".

This permits exports and re-exports of some technology and software provided the software or technology is destined to Country Group B. A written assurance is required from the consignee before exporting or re-exporting under this License Exception that the importer will not export or release the technology to a national of a country in Country Groups D:1 or E:1 which presently include the following countries:

- Country Group D:1 includes: Armenia, Azerbaijan, Belarus, Burma (Myanmar), Cambodia, China (PRC), Georgia, Iraq, Kazakhstan, North Korea, Kyrgyzstan,

[30] Under the US regime, dual nationals outside the US (for example members of University departments in the UK) may be viewed differently. For instance, under the ITAR, a person with dual British and Iranian nationality is considered a national of both the U.K. and Iran. Under the EAR, the person is generally considered only a national of their most recent country of citizenship or permanent residence (so, for instance, an Iranian citizen who has acquired permanent residence in the U.K. would typically be considered a U.K. national). While they define dual nationals differently, both regulations have special rules under which re-export to dual nationals may be prohibited or permitted. See further Allen Green International Government Contract Law, Chapter 9

[31] See http://www.aueco.org/sitebuildercontent/sitebuilderfiles/USEtechnologyAUECOcorrected.pdf

Laos, Libya, Macau, Moldova, Mongolia, Russia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan, and Vietnam.

- Country Group E: 1 includes: Cuba, Iran, North Korea, Sudan, Syria

The supplier needs to be asked: Could you please confirm [per TSR 704.6(a)(1) and (2)]:

- That the supplier is able to export under TSR 704.6(a)(1) and (2)
- Which countries currently fall within Country Groups D:1 and E:1 presently? Are there any other countries that have to be avoided?
- It would be worth confirming the position for a possible disclosure either within the University or outside it.

Note the University needs to comply with UK Export Controls in relation to any export outside the UK

A form of assurance is suggested on the following page.

The University of , Department of

US EXPORT CONTROL CERTIFICATION under the Technology and Software under Restriction (TSR) permission

To: [insert supplier name and company registration number and address]

The University certifies as follows in respect of the following equipment, material, technical information or other technology ("Technology"):

Description of Technology

Export Control Classification Number

[Supplier] has confirmed the Technology falls within the Technology and Software under Restriction (TSR) permission.

1. The Department will not use the Technology for any purpose related to armaments, nuclear energy, weaponry or other military use.
2. The Department will not re-export (i.e. disclose) or release the Technology to any third party whether in the UK or abroad contrary to the Technology and Software under Restriction (TSR). Specifically it will not re-export or release to nationals of the countries in the D:1 and E:1 Country Groups, which presently include the following countries:
    - Country Group D:1 includes: Armenia, Azerbaijan, Belarus, Burma (Myanmar), Cambodia, China (PRC), Georgia, Iraq, Kazakhstan, North Korea, Kyrgyzstan, Laos, Libya, Macau, Moldova, Mongolia, Russia, Tajikistan, Turkmenistan, Ukraine, Uzbekistan, and Vietnam.
    - Country Group E: 1 includes: Cuba, Iran, North Korea, Sudan, Syria
3. If the University exports outside the UK it will comply with UK export control law (per the UK Strategic Export Control Consolidated Lists which incorporate the EU Dual Use Regulations 2009 lists).

Signed for and on behalf of

by

…… ……

University of Date

Permissions for deemed re-export inside the University only: use of security clearances:

The US Bureau of Industry and Security issued updated guidance in 2013 Regarding the Treatment of Dual and Third Country Nationals with Respect to Deemed Re-exports of Technology or Source Code Subject to the EAR. This was complemented by a US-UK Exchange of Notes. This means that unclassified defence articles (including unclassified technical data) may be disclosed to dual or third country national employees (but not students) of UK entities, that are approved end-users or consignees (including approved sub-licensees) for such defence articles, subject to satisfying certain screening and recordkeeping requirements. See gov.uk links in the box above. A form of certification for this approach is suggested below.

The University of , Department of

US EXPORT CONTROL CERTIFICATION – ACCESS TO TECHNOLOGY BY UNIVERSITY PERMANENT MEMBERS OF STAFF

To: [insert supplier name and company registration number and address]

The University certifies as follows in respect of the following equipment, material, technical information or other technology ("Technology")

Description of Technology

Export Control Classification Number

1. The Department will not use the Technology for any purpose related to armaments, nuclear energy, weaponry or other military use.
2. The Department will not re-export (i.e. disclose) the Technology to non-UK nationals outside the Department whether in the UK or abroad without the authorization of the US agency (State or Commerce Department).
3. The Department will only share the Technology with non-UK nationals who
    a. are University employees
    b. and who either
        i. hold a security clearance approved by the United Kingdom Government, or
        ii. have been screened for employment under the United Kingdom Government's Baseline Personnel Security Standard (BPSS).
4. The University maintains records of those employees who have been screened.

Signed for and on behalf of

by

…….. ……

University of Date

Permissions for deemed re-export inside the UK only: use of the License Exception Strategic Trade Authorization (STA)

This allows the re-export within the UK of certain technologies. If neither the TSR or the use of security clearances cover your need, it is worth asking the US partner if the STA is available for the technology. If so there are 3 conditions that need to be met:

- The US exporter has a duty to inform the university of the STA license conditions
- The University has to provide a statement acknowledging it understands that any subsequent retransfer or reexport requires a similar acknowledgement statement from the proposed recipient entity before sharing the technology with it.
- The University will keep a record of the persons with whom it shares the technology.

If the technology is on the US munitions list, it is likely there will be an STA license condition that the technology can only be shared if the *ultimate* end user for such items is the armed forces, police, paramilitary, law enforcement, customs, correctional, fire, or a search and rescue agency of government.

If the technology is to be shared within Country Group A.5 it may be that the license application can be organised by the US exporter to make the further transfer possible.

(see https://www.bis.doc.gov/index.php/forms-documents/doc_view/452-supplement-no-1-to-part-740-country-groups)

A form of acknowledgement certificate is suggested below:

The University of , Department of

US EXPORT CONTROL CERTIFICATION – License Exception Strategic Trade Authorization (STA)

To: [insert supplier name and company registration number and address]

The Department of XXX ("the Department") certifies as follows in respect of the following equipment, material, technical information or other technology ("Technology")

Description of Technology

Export Control Classification Number

[Supplier] has confirmed the Technology falls within the permission in the License Exception Strategic Trade Authorization (STA). The conditions are annexed in Appendix 1

1. The Department acknowledges that the Technology is subject to the STA and the conditions (if any) set out in Appendix 1. The University understands that any subsequent retransfer or reexport of the Technology requires a similar acknowledgement statement from the proposed recipient entity before sharing the technology with it.
2. The Department will keep a record of the persons with whom it shares the technology.

Signed for and on behalf of

by

…….. …….

University of Date

Appendix 1 - License Exception Strategic Trade Authorization (STA) Conditions

[to be completed by the supplier]

Areas of difficulty:

- There may be no scope for disclosing to students, under any of the above permissions.

- There may be no scope for disclosure directly to external collaborators in other universities inside or outside the UK, falling within D1 or E2, unless the STA permission applies or the original US supplier is also able to disclose to the other university (say under the TSR) and that university can then deploy the US-UK Exchange of Notes.

Other Certifications

Beyond ITAR licence application certifications and certifications in relation to TSR, the STA or security clearances for internal University employee access, US export control law does not impose on the U.S. exporter an obligation to request a written statement or certification from the foreign entity that it has met all the requirements of ITAR, for example to prevent the diversion of defence articles to unauthorized end-users and end-uses. However, the Directorate of Defense Trade Controls advises that is good business practice to be sure that foreign companies that are receiving ITAR-controlled items understand the requirements and restrictions associated with the receipt and handling of such items[32].The Bureau of Industry and Security now includes a requirement in its licences that "The applicant is responsible for informing the other parties identified on the license, such as ultimate consignees and end-users, of the license's scope and of the specific conditions applicable to them."[33]

Thus a British university should not otherwise have to certify that it understands and will comply with US export control law. Nor should it be required to certify in broad terms that it does not engage in any direct or indirect research which has or may have military application.

Where the US entity does ask for other assurances it should be asked to confirm

- why
- the law (by providing a reference to the regulation or permission being relied upon by the supplier)
- what the recipient has to do.

US export control professionals do tend to ask for over-reaching documents to be signed. This should be resisted. Offer instead to sign a restriction on re-export, provided that this is consistent with the intended use of the technology.

Finally, do not forget to comply with UK Export Controls.

H.4. Suggested contract clause for use in collaboration agreements with US collaborators

"Both parties shall comply with applicable export control legislation. The [UK University] will comply with US export control legislation provided that the [US collaborator] informs [the UK University] in writing of scope and the specific conditions applicable to [the UK University] under the [US University's] license permitting export from the US under The International Traffic in Arms Regulations or the Export Administration Regulations as applicable."

[32] http://www.pmddtc.state.gov/faqs/DCTCN.html
[33] See FAQ on US BIS's New Boilerplate License Language at https://www.bis.doc.gov/index.php/policy-guidance/deemed-exports/deemed-exports-faqs?view=category&id=114#subcat116

Appendix I: Example of a university policy or statement to provide on academic website or intranet

In pursuit of its mission to undertake excellent research and provide world-class education, the University engages widely in international research collaboration, global movement of researchers and the exchange of new ideas. However some of the knowledge held, goods used, and activities conducted by academics and researchers have the potential to be misused. Some of the work done at the University is subject therefore to export control law and the Academic Technology Approval Scheme (ATAS), which requires certification of foreign students enrolled on certain advanced courses.

Controls over the export of strategic goods or technology have been enacted in the UK and the EU for decades via a consolidated list of controlled military and dual use items (civil technology which may be used for military purposes). In addition all UN members have been required since 2004 to maintain export controls to prevent the proliferation of weapons of mass destruction. UN or EU sanctions may also apply. As a result in some cases individual academics may need an export licence from the UK Export Control Organisation to carry out an activity - failure to obtain one being a criminal offence. Controls can cover not only tangible goods, but also software, data, technology and know-how.

The trend towards increased international research collaboration requires researchers and universities to become increasingly vigilant as to when export control law applies. Compliance with export control should also be seen as part of the broader responsibility for research integrity. As such, the University has published this statement to raise awareness within the institution of export control regulations, individual responsibilities and the actions that the University will take to support researchers, including the provision of guidance and advice.

In the academic context, export controls are most likely to apply in relation to scientific and technical research with military, nuclear, chemical, biological, missile and aerospace applications. However all researchers, particularly those in the scientific and engineering disciplines, need to be aware of export control regulations.

The responsibility for compliance with export control regulations rests with the individual researcher. Researchers, particularly in science and engineering disciplines, should ensure that they:

- Have read and understood University guidance on export control;
- Are aware whether their research areas may be subject to export control legislation.
- Consider the University's guidance on export control whenever embarking on an activity that could:
    - lead to the physical or electronic export of goods, software or technology outside the UK;
    - involve goods, software or technology with the potential for military or WMD use;
    - involve the transfer of knowledge within the UK for use in a WMD programme outside the UK (including through teaching);

- involve the transit of goods, software or technology through the UK.

- Seek advice and apply for licences as necessary.

In the vast majority of cases export controls will not apply, particularly as basic scientific research, and information that is already in the public domain are exempt from the legislation (except where sanctions apply or the item or technology is intended for a WMD use). However, should a researcher suspect that export controls may apply to their work, they should seek advice from the Research Office. In some cases it will be necessary to apply for an export licence from the UK Export Control Organisation to carry out an activity.

Although responsibility for compliance with export control regulations rests with the individual researcher, the University will ensure that it takes adequate measures to support researchers to achieve compliance and ensure that the University itself has complied with the law. To achieve this, the University will:

- Register with the Export Control Organisation web service so that export control queries and licence applications can be submitted;
- Make available clear up-to-date guidance, training and sources of advice for researchers seeking information on ATAS and export control regulations;
- Provide particular support as necessary, to researchers working in disciplines most likely to be affected by export control law.

Information on the support provided by the University is available on the University's export control webpage.

Appendix J: University web page on Export Control and Advice Template[34]

The University has adopted a policy/statement on export control and non-proliferation. See **here**.

Researchers need to know whether their research may be subject to export control legislation. As a first step researchers should consider the basic awareness flow chart. See **here**

When embarking on a particular project, the PI should consider the Tool Kit (**available here**) to determine if the research may fall within the UK Consolidated Lists. If so, the PI must consult the UK Consolidated Lists (**here**).

Controls can cover not only tangible goods, but also software, data, technology and know-how. An export licence must be obtained from the Export Control Organisation to export any goods or information where:

- goods, prototypes, information or materials fall within the UK Consolidated Lists;
- results would include technology which is required and necessary for the development, production or use of controlled technology; or
- the researcher is aware that a student or collaborator may be linked to a programme for weapons of mass destruction.

Failure to obtain a licence is a criminal offence.

Fuller guidance is available **here**.

[34] Researchers could be directed to this page when submitting grant applications

ADVICE TEMPLATE (when asked about the impact of Export Controls on an international collaboration):

Please consult the Higher Education Guide on Export Controls and the ATAS Student Vetting Scheme. Here is how you use the Guide:

1. Look at the Decision Tree and red flags in App A and the flow charts in App B. You might also find it useful to look at the case studies in section 6 of the Guide.
2. If it seems the work might fall within the list of controlled items, get the Consolidated Lists checked at https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/313609/strategic-export-control-consolidated20140517.pdf
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 that 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.

Acknowledgements

Principal Authors: Rosemary Boyle and Ian Stewart

Graphic Design: David Jones

University of Cambridge, Rosemary Boyle and Rhys Morgan

Kings College London (Project Alpha), Ian Stewart

University of Sheffield, Helen and David Jones

Imperial College London, Ben Hughes, Mirabell Nsofor, Milena Radoycheva

University of Surrey, Sarah Litchfield

University of Southampton, Diana Galpin

University of Oxford, Carolyn McKee

Manchester Metropolitan University, David Worrall

University of Exeter, Clare Turner

University of Birmingham, Caroline Pike

George Washington University, Allen Green