

Export Controls Policy

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² Other for instance staff representatives or other stakeholders

SETU Governing Body Policies website	
All Staff Email	

Feedback or issues arising on implementation of this policy should be communicated to the policy author.	
Policy Author:	James O’Sullivan

Policy Management Framework Compliance Review as requested by EMT all draft policies should be reviewed by the Policy Review Group ³ in advance of review by EMT. Please confirm that the policy was reviewed by the policy review group.	
Date Policy Reviewed:	

³ Contact susan.green@setu.ie or sarah.morrissey@setu.ie

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1 Introduction/Context

1.1 The South East Technological University supports, develops, and welcomes knowledge creators, innovators, and entrepreneurs, while supporting regional and national industry and other stakeholders. Our vision is to deliver excellence in multidisciplinary research practice and encourage collaboration between researchers and strategic European and global partners in industry and academia. The aim is to advance the key research priorities relevant to the region, aligned with national and European research priorities, and the United Nations' Sustainable Development Goals (SDGs). South East Technological University is renowned for active leadership in education, enterprise, and engagement. SETU is committed to providing an environment where research integrity prevails through the promotion of good research practices, together with the use of fair and transparent procedures. The National Policy Statement on Ensuring Research Integrity in Ireland, substantively based on the European Code of Conduct for Research Integrity, and the National Research Integrity Forum commits Irish research performing organisations to the highest standards of integrity in carrying out their research, so that partners and other stakeholders, and the international research community have full confidence in the Irish research system.

1.2 International collaboration is a fundamental part of SETU research activity, our researcher's career development and national research success. SETU's network of international research partners is evolving as diversification of our global linkages grows. This brings with it a host of opportunities, for example, partnerships with globally leading researchers and access to cutting-edge research facilities. International research collaboration also carries risks. Among these is the potential to, even unintentionally, breach national and international law by collaborating in ways that contravene international legal frameworks designed to:

- Prevent the proliferation of weapons of mass destruction
- Support global security
- Protect human rights
- Prevent terrorism
- Support regional stability

1.3 Dual-use export controls govern activities involving items (materials) equipment, software, and technologies which can be used for both civil and military purposes and possibly associated with the creation of conventional military items or the proliferation of nuclear, radiological, chemical, or biological weapons, also known as Weapons of Mass Destruction (WMD), and their delivery systems such as missiles and drones.

1.4 As a result, researchers at SETU may require an export licence from the Trade Licensing & Control Unit of the Department of Enterprise, Trade and Employment (DETE). In the researcher 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 understand export control regulations and ensure that they comply with them. Compliance with export control should also be seen as part of the broader responsibility for research integrity. A breach of export controls would constitute a serious offence and could result in the guilty party being liable to a fine or imprisonment. These penalties apply to both individuals and corporate entities.

1.5 It is the responsibility of each individual researcher to ensure that they do not export controlled items without an appropriate licence. Researchers are expected to familiarise themselves with this policy with due reference to the Government of Ireland Export Licensing and Control Information for Exporters, EU compliance guidance for research involving dual-use item and European COMMISSION RECOMMENDATION (EU) 2021/1700 on internal compliance programmes for controls of research involving dual-use items under Regulation (EU) 2021/821 of the European Parliament and of the Council.

2 Purpose

The purpose of this policy is to provide staff with the information and structures to ensure their compliance with National and International legislation related to Export Control within a research performing organisation.

3 Scope

This policy applies to all staff of SETU. It shall be made generally available and published publicly via the University web-site.

4 Principles

The general principle which should be followed are the careful control and governance of dual use items.

The guiding principles for Export Controls are:

4.1 National Security

Prevent the export of goods, technologies, or information that could be used to enhance the military capabilities of adversaries or threaten a country's security. Safeguard critical infrastructure and sensitive technologies.

4.2 International Non-Proliferation

Support efforts to prevent the spread of weapons of mass destruction (nuclear, chemical, biological) and their delivery systems. Ensure compliance with international treaties and agreements, such as the Wassenaar Arrangement, Nuclear Suppliers Group, and the Missile Technology Control Regime.

4.3 Economic and Trade Interests

Protect domestic industries by ensuring that strategic technologies and innovations do not fall into the hands of competitors. Maintain a balance between enabling international trade and protecting sensitive sectors.

4.4 Human Rights and Ethical Considerations

Restrict exports that could be used to violate human rights, such as surveillance technologies or items used for repression. Avoid enabling activities that support terrorism, corruption, or other illicit practices.

4.5 Strategic Alliances and Foreign Policy Objectives

Align export controls with foreign policy goals and strengthen alliances with partner nations. Use export controls as tools to enforce sanctions or other measures against specific countries or entities.

4.6 Transparency and Compliance

Provide clear guidelines and frameworks for businesses and exporters to comply with regulations. Encourage self-reporting of violations and maintain consistent enforcement practices.

4.7 Technological Safeguarding

Ensure that cutting-edge technologies, particularly those in AI, cybersecurity, biotechnology, and defence, are not exported without proper authorisation. Prioritize the protection of intellectual property and prevent its misuse.

4.8 Adaptability

Continuously update regulations to address evolving threats and technological advancements. Engage in regular reviews to ensure relevance and effectiveness in the global context.

5 Policy

Export Controls

- 5.1 The European Union operates a system of controls on the export of sensitive items from the member states. These controls form part of a global framework designed to prevent the proliferation of weapons of mass destruction, to preserve regional stability and to protect human rights. Export controls under the relevant legal frameworks comprise licensing requirements for certain sensitive goods, technologies and technical assistance or export restrictions (sanctions) in respect of certain destination countries or end-users.
- 5.2 In Ireland, the Department of Enterprise, Trade and Employment (DETE) is the national competent authority. The Trade Licensing & Control Unit within DETE is responsible for administering the export licensing system set out in the relevant Irish and European legislation. This guidance is for 'research involving dual-use items': dual-use items that are used during research or research that results in research output in any possible form meeting the technical specification of a dual-use item in the EU dual-use control list or in a complementary national dual-use list (if any).
- 5.3 In a limited number of cases, it includes situations with military or WMD end-use (concerns for non-listed dual-use items). It is important to note that not every research activity involving dual-use items will require an authorisation. The Trade Licensing & Control Unit has produced a general guide for exporters, including higher education institutions, to understand export controls and their obligations under relevant EU and national legislation. SETU and SETU researchers must in all cases comply with these guidelines, consistent with the HEA Principles for Good Practice in Research in Irish HEIs and HEA governance and oversight requirements more generally.
- 5.4 Since dual-use items are predominantly used for civilian purposes, their potential for abuse is often not apparent at first glance. In the wrong hands, however, they pose a threat to international peace and the security interests of the European Union and its Member States. The definitive list of dual-use items is set out in EU legislation, namely, Annex I of Council Regulation (EC) 428/2009. The list of dual-use items is updated annually by the European Commission, based on the work of technical experts in several multilateral non-proliferation regimes, to take account of advances in technology and geo-political developments.

The range of controlled items is very broad and spans 10 categories:

- Category 0 Nuclear materials, facilities and equipment
- Category 1 Special materials and related equipment
- Category 2 Materials processing
- Category 3 Electronics
- 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

5.5 Many ICT products, both hardware and software (e.g., data storage, networking, cybersecurity), are classified as dual-use items by virtue of the fact that they incorporate strong encryption for security purposes. Products for aerospace applications (e.g., drones, planes, rockets) can also be controlled when there is a risk of diversion to weapon delivery systems. Most dual-use items can move freely within the EU. However, a licence is required to export them to a third country (i.e., outside the EU).

5.6 The exceptions, which require a transfer licence for movement within the EU, are very sensitive items such as nuclear materials, which are listed in Annex IV of the Dual-Use Regulation. A licence is required for transfers of military equipment within the EU, as well as for export to a third country (i.e., outside the EU). The export or import of items listed in Annex II of the Anti-Torture Regulation is prohibited. The export of items listed in Annex III of the Anti-Torture Regulation is subject to prior approval and licensing by the Department. There are corresponding licensing requirements for brokering of controlled goods and for providing technical assistance related to these goods. The legal obligation to comply with export controls rests with the exporter.

5.7 The aim of export controls is not to censor scientific research (output), but to prevent security-related abuse when sensitive goods or knowledge are transferred abroad. Scientists and research institutions are bound by the same laws as manufacturing industry and everyone else. Before goods are exported or information is transferred, exporters and information brokers have a duty to check whether their actions require prior regulatory approval. Academic freedom principles and/or Open Access related to research output and data does not exempt SETU researchers from complying with Export Controls regulations.

5.8 The following topics are some examples of research that could trigger dual-use export controls:

- changing the host spectrum of lumpy skin disease virus to include human reservoirs;
- multispectral imaging camera sensors for data collection of crops;
- laser-based next-generation uranium enrichment technology as a potential alternative for the industrial enrichment that involves gaseous uranium in centrifuges;
- 3D printing of energetic materials;
- prototype drone with spraying system for combatting Eastern equine encephalitis virus; and
- autonomous scientific underwater vessel that collects data automatically in deep sea regions.

5.9 Illustrated in **Appendix 1** are research areas that, among others, may be subject to dual-use export controls. Some recurring research scenarios that may trigger export controls include:

- Teaching, consulting, collaborating, or working on research involving dual-use items with visiting foreign researchers inside the customs territory of the Union;
- Teaching, consulting, collaborating, or working on research involving dual-use items outside customs territory of the Union;
- Organising a (virtual) conference/meeting/seminar or presenting at a (virtual) conference/meeting/seminar inside or outside the customs territory of the Union about research involving dual-use items;
- Publishing about listed dual-use technology;
- Submitting information for patent application and patented information; and
- Exporting tangible dual-use items (goods), including prototype design and second-hand lab equipment.

5.10 For many items their control status is determined by their performance characteristics. Low specification items may not be controlled while higher specification variants or very specialised models are controlled. Export controls may apply to information as well as physical goods. Transfers of information, or technology, related to controlled items are themselves controlled. The provision of technical assistance relating to a controlled item may also be subject to control. Similar but distinct legal definitions of the terms 'technology' and 'technical assistance' apply depending on whether the context is dual-use items, military equipment, or sanctions.

5.11 For dual-use items the definitions are given below-

'Technology' means specific information necessary for the "development", "production" or "use" of goods. This information takes the form of 'technical data' or 'technical assistance'.

'Technical assistance' may take forms such as instructions, skills, training, working knowledge and consulting services and may involve the transfer of 'technical data'.

'Technical data' may take forms such as blueprints, plans, diagrams, models, formulae, tables, engineering designs and specifications, manuals and instructions written or recorded on other media or devices such as disk, tape, read-only memories.

5.12 The EU dual-use Regulation contains several de-controls, stating under which conditions a certain listed item is excluded from control (where controls on dual use technology or software are removed it is de-controlled). Hence, while such item meets the technical requirements, it will not require a licence for export or transfer. Importantly, the de-controls can only be applied to listed dual-use items. Researchers should always seek advice as to whether or not their research is de-controlled.

- **Technology Resulting from Basic Research** - "Experimental or theoretical work undertaken principally to acquire new knowledge of the fundamental principles of phenomena or observable facts, not primarily directed towards a specific practical aim or objective." Non-fundamental research or applied research is not de-controlled and a scientific classification of a project as 'basic research' does not necessarily mean de-control. Criteria for determination will be based on Technology Readiness Level (TRL- Appendix 3), prevalence of industry funding and will be on a case-by-case.
- **Technology already in the public domain** - Technology or software made available without restrictions upon its further dissemination (copyright restrictions do not remove technology or software from being 'in the public domain'). In essence, this de-controls listed dual-use software and technology which anyone can obtain. If information is only made accessible after an individual decision has been taken by the information carrier or owner, then not everyone has the possibility to access the information. Publications: Intention to publish and act of publishing are not exempt from control.
- **Minimum necessary information for patent application** - Minimum information required to file patent applications (seek advice from the Technology Transfer Office).

6 Responsibility and Authority

SETU Compliance and Governance Structure

6.1 The responsibility for compliance with export control regulations ultimately rests with the individual researcher who foresees the possibility to export goods, technology, software, or knowledge. All SETU staff members (including, but not limited to, research, academic and PMSS) are bound to comply with all EU and national dual-use export control laws and regulations.

6.2 This policy provides direction to ensure SETU and SETU researchers are fully compliant in respect of national and international policy on Export Controls and should be read with due reference to national and EU documents. SETU also provides as part of training a specialist module on Export Controls (contact the Research Integrity Officer for access to this training module).

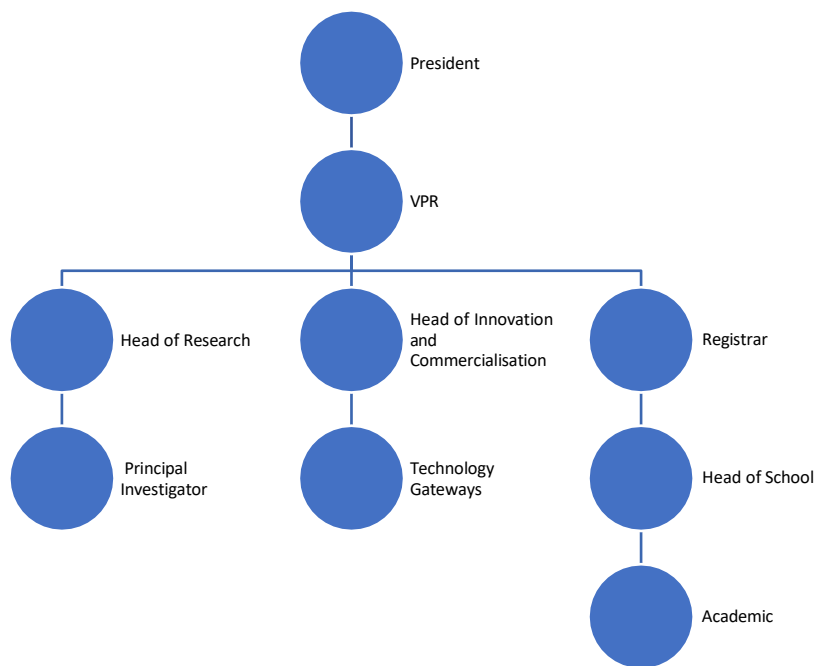


Figure 1 SETU Organisational Compliance Structure for Export Controls

Vice President of Research, Innovation and Impact - Overall responsibility for implementing SETU’s export screening process and procedural compliance policies. This includes approval of licence applications, oversight that adequate resources are allocated to compliance as well as ensuring that there are regular reviews, audits,

reporting, risk assessments, corrective actions and updates of the compliance measures in place.

Head of Research - Export compliance function responsible for developing and/or implementing the compliance measures of SETU for researchers. The tasks of this function include responding to export control enquiries, deciding whether a licence application is relevant and what mitigating measures are necessary for a given activity. RSU will also help staff to understand licence conditions, apply due diligence checks, maintain appropriate records securely and provide access to training and raising awareness of the policy guidelines.

Responsibility for the implementation of practical steps to be taken by researchers to ensure conformity with SETU requirements. This function entails tasks such as identifying projects/activity that might require a licence, apply end-use/end-user checks and undertake the prescribed mitigating measures and approvals while performing research activities. The screening process collects and analyses relevant information concerning the following aspects: item classification, risk assessment of the activity, licence determination and application, and post-licensing. Depending on the scope and the sensitivity of the research undertaken, the export control screening process can be relevant to several activities:

- Exporting items (through tangible means of transfer);
- Contracting (primarily with international partners);
- Patenting/licensing of research results/publishing (e.g., articles, conference material, software);
- Electronic transmissions (including making items available online);
- Hiring staff and receiving visitors (mostly, sanctions related);
- Travelling abroad.

Head of Innovation and Commercialisation - Export compliance function responsible for developing and/or implementing the compliance measures of SETU for knowledge transfer. The tasks of this function include responding to export control enquiries, deciding whether a licence application is relevant and what mitigating measures are necessary for a given activity. TTO will also help staff to understand licence conditions, apply due diligence checks, maintain appropriate records securely and provide access to training and raising awareness of the policy guidelines in relation to commercial contracts.

Registrar/HOS - Export compliance function responsible for developing and/or implementing the compliance measures of SETU for academic staff. The tasks of this function include responding to export control enquiries, deciding whether a licence

application is relevant and what mitigating measures are necessary for a teaching activity. Registrar will also help staff to understand licence conditions, apply due diligence checks, maintain appropriate records securely and provide access to training and raising awareness of the policy guidelines in relation to teaching.

Principal Investigator/Institutes/Technology Gateway/Centers/Academic - Responsibility for compliance with the policy guidelines. Individuals must be able to identify and report export control issues while conducting their research/activity. If an individual suspects that an export licence may be required, they should consult with the HOR, TTO or HOS. Should a licence be required the application process will require considerable input from the individual and may require a signed undertaking from the end user of the item or technology. The licence application will require approval of VPRII. Once a licence has been issued the HOR, TTO or HOS will discuss any terms of the licence with the individual as well as their record keeping responsibilities. Export cannot take place until the licence has been issued and it must comply with all terms of the licence. When exporting physical items using a freight forwarding service or similar, it is important to ensure that they satisfy professional standards. It is also essential to provide clear written instructions to the freight forwarding agent which will include the full licence details, an explanation of the implications of licence for the export (e.g., for routing) and their responsibility for documentation (e.g., returning completed customs declaration for records).

All queries in relation to export controls from any staff member whether teaching, technical, research, commercial or other should be directed in the first instance to exportcontrols@setu.ie. Further information can be found at <https://www.setu.ie/research-innovation/export-controls>.

The VPRII will provide an annual report to EMT on the number of export control licenses applied for each year to DETE.

Export Screening Risk Assessment Procedures

- **Item classification, including software and technology;** This aspect of the screening procedure seeks to understand whether an item used or produced in the framework of research falls within the scope of the control list(s) or, whether a research project will be confronted with controlled items. This is done by comparing the technical characteristics of an item against the EU and national dual-use control lists. If applicable, identify whether the item is subject to restrictive measures (sanctions and embargoes) imposed by the EU.

- **Risk assessment of the activity;** Ensure that none of the parties involved in a project or sensitive activity are subject to restrictive measures. Know your partner(s) and consider how they intend to use your research involving dual-use items. Be aware of the existence of research organisations acting as cover for military research or having strong ties with state-owned entities. Ask for an end-use statement if the activity involves listed dual-use items or when there are end-use(r) concerns in the case of non- listed dual-use items.
- **Stated end-use and involved parties screening;** There might be indications suggesting that a partner will use dual-use items shared or delivered by your organisation in the context of unauthorised military research or, in relation to WMDs and their means of delivery or, other unlawful purposes.
- **Diversion risk screening;** be vigilant for diversion risk indicators and signs about suspicious enquiries for cooperation.
- **Catch-all controls for non-listed dual-use items:** If a SETU researcher or SETU becomes aware or suspects that an activity or project entails a risk, it must abstain from engaging further in this research and immediately inform the competent authorities who will conclude whether a licence application is necessary.
- If the result of the items classification and the risk assessment of the activity leads to the conclusion that the activity is controlled then further aspects including a determination of which licence (authorisation) is needed (e.g., for export, brokering, transfer and transit) as well as application for such licence and post-licensing, including shipment control and compliance with the conditions of the authorization will be required.

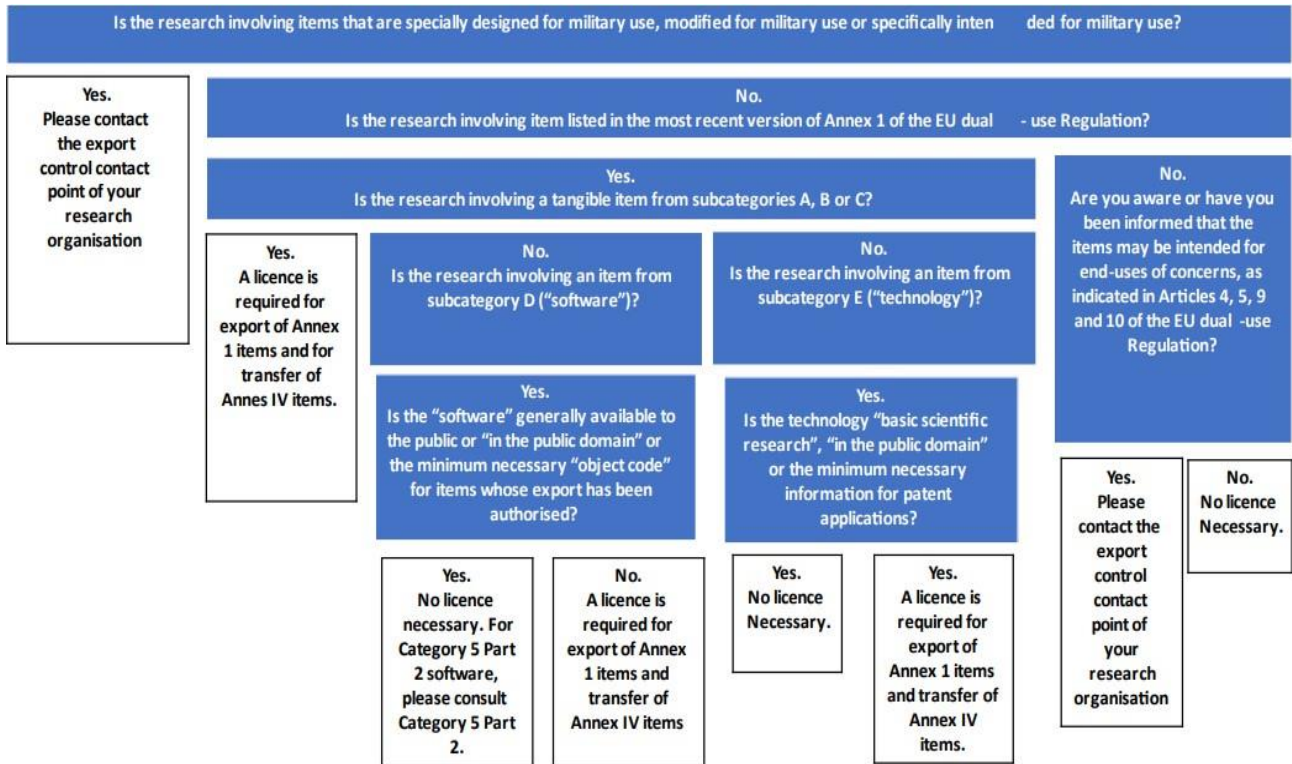


Figure 2 Decision tree flow chart of licence requirements for export

Record Keeping

The VPRII will be responsible for ensuring that the following records are maintained.

- Details of licence requests.
- Details of the consignee and end user (as well as anyone else involved in the export) including name, address and country.
- The nature of the export and description of the item exported (including quantity).
- Original source of the items exported (including supplier details).
- Correspondence with the Trade Licensing & Control Unit of the Department of Enterprise, Trade and Employment (DETE) relating to the project.
- The export licence.
- Records (including dates) of each transfer under the licence.
- The date of the transfer or the period over which the transfer takes place.
- In the case of software, the software that is exported and the details of the transfer.
- In the case of a transfer by electronic means, the email or facsimile.
- Any further records required by the licence or judged relevant by VPRII.

These records will be kept for compliance with SETU's Data Retention Policy from the end of the year in which the export took place or longer if required by the licence. A register of all export licences obtained by the University will also be kept by the VPRII.

Audit Export licences may be subject to audit by the Trade Licensing & Control Unit of the Department of Enterprise, Trade and Employment (DETE) to ensure that the terms of the licence have been complied with. Office of VPRII will also undertake an annual internal audit of a small number of existing licences (the number will be proportionate to the number of active licences). The results of the audit will be reviewed and any necessary changes to this policy will be made.

7 Frequently Asked Questions

7.1 Who is the “exporter”?

Both natural persons and legal persons are covered by the definition of exporter. This means that a SETU researcher on his or her own behalf or the SETU organisation on behalf of the researcher can be the exporter. It is up to the SETU office of VPRII to make internal arrangements concerning who will apply for a licence. It should be noted that the identification of the exporter is different from the identification of an export. When a

visiting third country researcher gets access to, for instance, controlled technology at a university campus inside the customs territory of the Union, then no export takes place. When this researcher returns home to his/her third country and brings with him/her the controlled technology, then an export takes place which requires an approved and valid licence. Hence, prior to this export, a licence application needs to be filed. The last person inside the customs territory of the Union deciding on the transmission of the controlled technology outside the EU, needs to apply for a licence.

7.2 If a publication contains controlled technology, does the SETU author, the SETU university or the scientific publisher have to apply for a licence?

The key point here is that a natural or legal person needs to apply for a licence and thus acts as the exporter. Who that is depends on the internal policy or the contractual arrangement between the author of the publication and the scientific publisher. If the publisher is established outside the EU, then the last person inside the EU deciding on the transmission of the controlled technology outside the EU, needs to apply for a licence. This may include Master and PhD theses and may require amendments/redactions/restricted access to parts. If these mitigations appear unfeasible, researchers at SETU through the Office of VPRII should liaise with the government Department fulfilling licence requirements.

7.3 Can a SETU employee when traveling abroad on a professional visit remotely accessing controlled technology or software located on the server of an EU-based research organisation?

SETU Employees accessing controlled technology or software abroad on a professional visit generally must apply for a licence before traveling.

7.4 Who needs to apply for a licence in case of a research consortium with partners in multiple EU Member States and third country partners?

The exporter, and thus the one who must apply for a licence, is the one that is the contractual partner of the consignee in the third country and has the power for determining the sending or transmission of the items from the customs territory of the EU. In other words, the consortium partner itself or the consortium leader itself may have to request a licence before sending of the dual-use items. This depends on the contractual arrangements between the consortium partners and the consortium leader.

7.5 Conferencing?

Virtual: Transmitting controlled technology outside the Union, requires licensing.

7.6 Collaborating or working on research involving dual-use items outside EU?

No control for EU persons engaged outside the EU in research involving dual-use items. So, no licence is needed in principle if there is no access to controlled dual-use items from

within the customs territory of the Union. However, national measures may require a technical assistance licence or may ban technical assistance. Sanctioned entity / country involvement may necessitate licensing / may be prohibited.

8 Compliance

It is expected that all employees of the University will comply with this policy.

9 Related Documents

EU guidance for dual use research:

<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32021H1700>

Guidance for exporters: DETE :

<https://enterprise.gov.ie/en/publications/publication-files/export-licensing-and-control-information-for-exporters.pdf>

Video on export controls:

[Export Licensing and Control: Information for Exporters - YouTube](#)

Australian guide to academia in China Report

<https://www.aspi.org.au/report/china-defence-universities-tracker>

Interactive Tool <https://unitracker.aspi.org.au/>

[Case Studies & Scenarios | Business & Industry | Defence](#)

[Dutch appeals court dodges decision on hotly debated H5N1 papers | Science | AAAS](#)

10 Useful Links

https://trade.ec.europa.eu/consultations/documents/consul_183.pdf

<https://eur-lex.europa.eu/legal->

[content/EN/TXT/?uri=uriserv%3AOJ.L_.2021.338.01.0001.01.ENG&toc=OJ%3AL%3A2021%3A338%3ATOC](https://eur-lex.europa.eu/legal-content/EN/TXT/?uri=uriserv%3AOJ.L_.2021.338.01.0001.01.ENG&toc=OJ%3AL%3A2021%3A338%3ATOC)

<https://eur-lex.europa.eu/legal-content/EN/TXT/PDF/?uri=CELEX:32009R0428>

<https://eur-lex.europa.eu/legal->

[content/EN/TXT/?qid=1550829571808&uri=CELEX:32019R0125](https://eur-lex.europa.eu/legal-content/EN/TXT/?qid=1550829571808&uri=CELEX:32019R0125)

11 Review of Policy

This policy will be reviewed in advance of the review date i.e. 21 January 2028, and/or as soon as possible following new or updated legislation, national or sectoral policy.

12 Policy Author

The authors of this policy are the Technology Transfer Office. Any feedback or issues arising on implementation of this policy should be communicated to the policy authors. They are responsible to ensure that the Policy Owner is aware of these comments when reviewing the policy.

13 Appendices

Appendix 1 Summary of Research Areas Impacted by Dual-Use Export Controls

Appendix 2 Summary of Licence Requirements for Dual-Use Items

Appendix 2 Technology Readiness Levels

Appendix 1: Summary of Research Areas Impacted by Dual-Use Export Controls

The following research areas are more likely to be impacted by dual-use export controls. Please note that this list is non-exhaustive and may serve as a (non-binding) tool to identify relevant research more easily. In this Appendix, the dual-use descriptors (right column) are rather general in nature. Specific export controls comprising sharp technical parameters are summarised below.

Research areas	Dual-use descriptors
Biology and (nano)biotechnology	Human, plant and animal pathogens Toxins Biological protection, containment and handling equipment
Chemistry Advanced material science	Chemicals, polymers, lubricants and fuel additives Chemical manufacturing facilities, equipment and components such as pumps, heat exchangers, valves and distillation columns Chemical protection, containment and handling equipment
Nuclear physics and engineering	Nuclear reactors and specially designed or prepared equipment and components Nuclear material
Energy and environmental technology	Optical and acoustic sensors Cameras
Computer science and engineering Information and communications technology	Source code for some listed acoustic data processing Digital ruggedized computers Intrusion software related items Telecommunications systems, equipment, components and accessories (including interception and jamming) Information security hardware, software and technology (including encryption and cryptanalysis)
Avionics and aerospace engineering and design	Accelerometers Gyroscopes Navigation (receiving) systems Drones Launch platforms Satellites Aero gas turbine engines Ramjet, scramjet or combined cycle engines

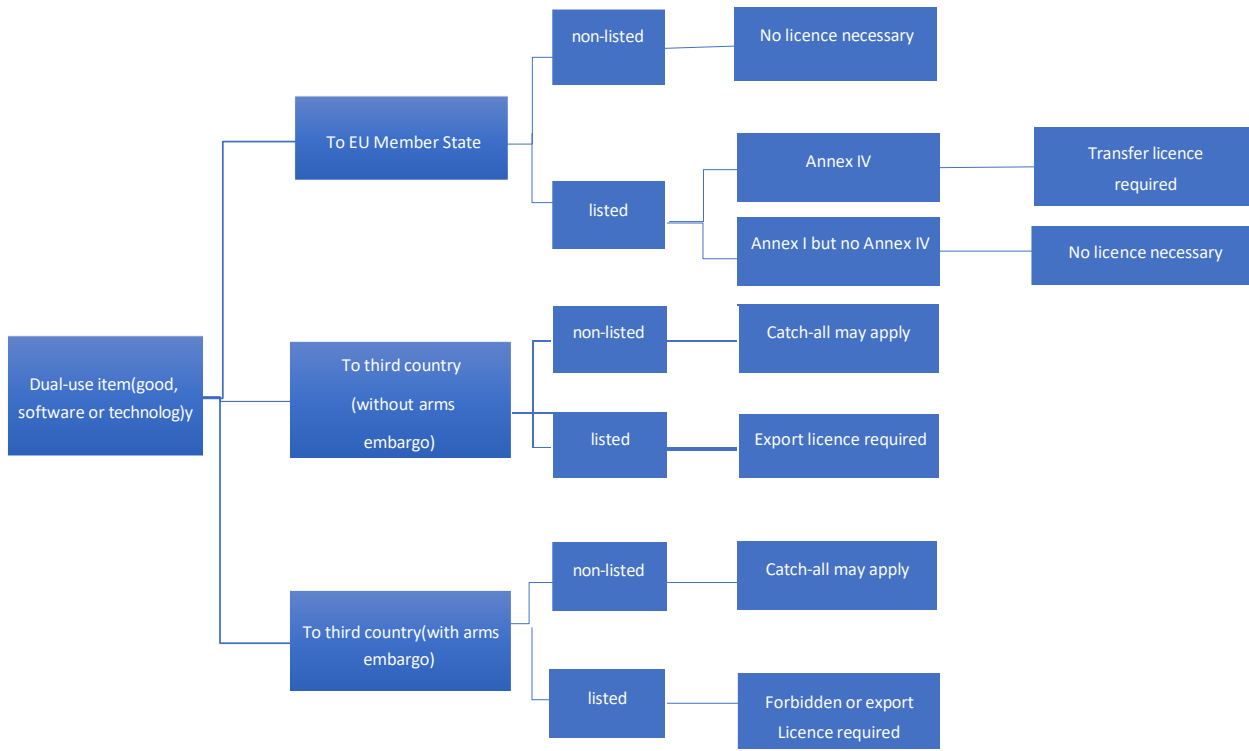
Semiconductor	<p>Integrated circuits</p> <p>Semiconductor manufacturing, testing or inspection equipment</p> <p>Wafer substrates</p> <p>(Computer-aided-design) software for semiconductors</p>
Optical engineering	<p>Lasers</p> <p>Optical sensors</p> <p>Imaging cameras</p>
Robotics and process automation	<p>Machine tools</p> <p>Robots, end-effectors and remotely controlled articulated manipulators</p> <p>Dimensional inspection systems</p>
Additive manufacturing (3D printing)	<p>Feedstock materials</p> <p>Manufacturing equipment</p>
Quantum technologies	<p>Quantum cryptography</p>
Artificial intelligence and machine learning	<p>Neural network integrated circuits</p> <p>Neural computers</p> <p>Electronic components</p>
Naval technologies	<p>Surface vessels</p> <p>Underwater vessels</p> <p>Underwater vision systems</p> <p>Power transmission and generation systems</p>
Cyber-surveillance items	<p>Mobile telecommunications interception equipment</p> <p>Internet surveillance systems</p> <p>Tools for the generation, command and control, or delivery of intrusion software</p> <p>Law enforcement monitoring software</p> <p>Digital forensic/investigative tools</p>

The following are scenarios where dual-use export controls may come into place. The list is non-exhaustive.

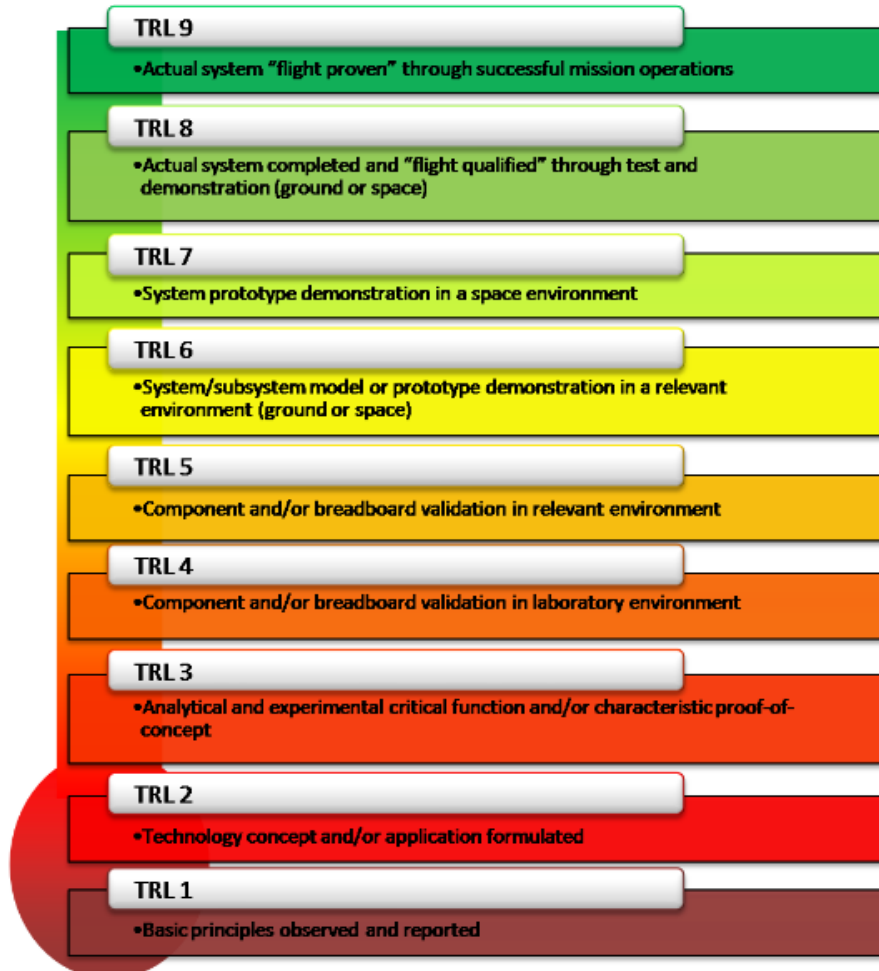
Scenario	What does the EU dual-use Regulation say?	To be considered as well
<p>Teaching, consulting, collaborating or working on research involving dual-use items <u>inside customs territory of the Union</u> with visiting third country researchers</p>	<p>The EU dual-use Regulation does not foresee controls for non-EU persons accessing dual-use items inside the customs territory of the Union. Hence, no licence is needed as long as the controlled dual use items remain inside the customs territory of the Union. When the visiting third country researcher returns home with access to (or in possession of) the controlled dual-use item, then a licence is needed.</p>	<p>In some cases, based on national provisions, a technical assistance licence is required or the supply of technical assistance is prohibited.</p> <p>A licence may be required in case a sanctioned entity or a natural/legal person of a sanctioned country seeks cooperation inside the EU. In some cases, such cooperation is prohibited according to EU sanctions.</p>
<p>Teaching, consulting, collaborating or working on research involving dual-use items <u>outside customs territory of the Union</u></p>	<p>The EU dual-use Regulation does not foresee controls for EU persons engaged outside the customs territory of the Union in research involving dual-use items. Hence, no licence is needed in principle <i>if there is no access to controlled dual-use items from within the customs territory of the Union.</i></p>	<p>In some cases, based on national provisions, a technical assistance licence is required or the supply of technical assistance is prohibited.</p> <p>A licence may be required in case a sanctioned entity or a natural/legal person of a sanctioned country seeks cooperation inside the EU. In some cases, such cooperation is prohibited according to EU sanctions.</p>
<p>Organising inside customs territory of the Union a (virtual) conference/meeting/seminar/... or presenting at a (virtual) conference/meeting/ seminar/... on research involving dual-use items</p>	<p>The EU dual-use Regulation does not foresee controls for non-EU persons accessing dual-use items inside the customs territory of the Union. Hence, no licence is needed <i>if the controlled dual-use items remain inside the customs territory of the Union.</i> When the visiting third country researcher returns home with access to (or in possession of) the controlled dual use item, then a licence is needed.</p> <p>If the conference/meeting/seminar is virtual and transmitted to a destination outside of the EU, then a license is needed for that part of the research that involves controlled dual-use items.</p>	<p>In some national cases, a technical assistance licence is required</p> <p>It is a good compliance practice to warn participants of licence requirements when exiting the customs territory of the Union with the controlled item(s).</p> <p>A licence may be required in case a sanctioned entity or natural/legal person of a sanctioned destination seeks cooperation inside the customs territory of the Union. In some cases, such cooperation is prohibited according to EU sanctions.</p>
<p>Organising outside customs territory of the Union a (virtual) conference/meeting/seminar/... or presenting at a (virtual) conference/meeting/seminar/... on research involving dual-use items</p>	<p>The EU dual-use regulation does not foresee controls for EU persons engaged outside the customs territory of the Union in research involving dual-use items. Hence, no licence is needed in principle.</p> <p><i>if orally presented, even when recorded on the spot, as long as there is no access to controlled dual-use items from within the customs territory of the Union.</i></p> <p><i>if accompanied by presentation or other conference material where the information is not meeting the controlled technology threshold(s).</i></p>	<p>In some cases, based on national provisions, a technical assistance licence is required or the supply of technical assistance is prohibited.</p> <p>A licence may be required in case a sanctioned entity or a natural/legal person of a sanctioned country seeks cooperation inside the EU. In some cases, such cooperation is prohibited according to EU sanctions</p>

	<p>The EU dual-use regulation requires a licence, <i>if there is access to controlled dual-use items from within the customs territory of the Union.</i></p> <p><i>if accompanied by presentation or other conference material (carried in paper, on laptop or other physical carrier such as USB stick) that contains controlled dual-use technology.</i></p>	
Publishing listed dual use technology	<p>A publication including technology that meets the thresholds for dual-use control needs an export authorisation. The intention to publish (and thus the act of publishing) is not enough to be considered to be in the public domain and is therefore not exempted from control. The export control authorities rely on the due diligence of research organisation to screen prepublications in sensitive research areas.</p> <p>In case a (draft) publication (or raw data) meets the thresholds for containing export controlled dual-use technology it is subject to export controls. This applies to both the pre-publication phase and to the actual publication phase. In principle, this can also apply to Master or PhD thesis that meet the controlled technology threshold(s).</p>	<p>The researcher or research organisation could consider to amend or omit the specific parts that contain the controlled technology or restrict the access to these specific parts.</p> <p>If mitigation is not feasible the researcher or research organisation should contact the competent authority on how to fulfil the licence requirement (e.g., individual licence application).</p>
Patented information and information for patent application	<p>No licence is needed in principle, as the export of patented information that is fully disclosed on the public record is considered to be “in the public domain” and hence exempted from export controls.</p> <p>No licence is needed for the export of the minimum necessary information for patent applications.</p>	
Export of tangible dual-use items (goods), including prototype design and second-hand lab equipment	<p>Research organisations may (re)sell, donate or lend dual-use items or temporarily export them for their own research projects. Regardless whether the items are new, a prototype or second-hand, they require a licence for export if listed in Annex I and for intra-EU transfers if listed in Annex IV of the EU dual-use Regulation.</p>	

Appendix 2: Summary of Licence Requirements for Dual-Use Items



Appendix 3: Technology Readiness Levels



Technology Readiness Levels