

Call for Evidence - 2026 Evaluation of the Dual-Use Regulation

Towards a more research-fit EU dual-use export control framework

Summary

The European Export Control Association for Research Organisations (EECARO) welcomes the evaluation of Regulation (EU) N° 2021/821. This paper offers the perspective of practitioners in the research sector. The central question for this Evaluation is not whether the Regulation applies to research, but how it can be applied consistently and proportionately to the research sector.

The evaluation comes at a time of increased geopolitical and geoeconomic tension. It is an opportunity to clarify the purpose and limits of export controls in a research context, and how it works best alongside research security and other instruments. Export controls should not become the default tool for every risk linked to international research cooperation.

Research organisations face difficulties in classifying emerging technology research before the relevant Annex I characteristics have been demonstrated or validated. They also face differing interpretations between national authorities, limited practical guidance on intangible transfers, cloud use, publications, guest researchers and European consortia, and licensing processes that do not always fit collaborative research. Decentralised institutions, such as universities, and smaller institutions face the greatest capacity constraints.

Export controls traditionally have been focused on demonstrated technical capability and (an) identifiable security risk(s). Controls on new and emerging technologies risk to capture (inadvertently) too much early-stage or experimental research. Such research often explores technical possibilities before the likely applications, users or capabilities are known. Export control implementation that includes the assumptions about future performance or end-use are therefore difficult to apply and can create unnecessary compliance burdens.

Below are 8 key messages from EECARO to support this Evaluation. These recommendations do not amount to a blanket exemption for research but request to consider the needs from researchers. They aim to focus scarce compliances resources on transfers, recipients, destinations and end-uses that present a concrete or identifiable risk, while reducing uncertainty and repeated administration where no such risk exists. EECARO remains committed to supporting the European Commission and

the EU Member State authorities in ensuring that export controls are implemented in a proportionate and practical manner within the research sector to achieve a level playing field for research organisations across Europe concerning export control regulations.

1. Ensure consistent interpretation and application of export controls across the EU Member States through clearer control provisions, in particular related to export, exporter, technical assistance, large-project authorisations and catch-all controls.
2. Update the rules for Intangible Technology Transfers, cloud computing, remote access and digitally connected research environments. Guidance should be the second-order support here.
3. Resolve the continuing legal uncertainty around scientific publication, dissemination and open science.
4. Clarify what counts as controlled technology and where the boundary of control lies. Pay specific attention to illustrating the difference between controlled dual-use technology in the form of technical assistance and technical assistance related to dual-use items.
5. Develop licensing arrangements that support collaborative and publicly funded international research, including a research-focused European Union General Export Authorisation (EUGEA).
6. Update research-specific guidance with more practical cases, clear examples and proportionate compliance expectations.
7. Improve consistency in research-related classification decisions through an EU repository of anonymised decisions and interpretations.
8. Strengthen cooperation between export control authorities and research funders so that relevant calls are flagged early and applicants receive timely guidance and training.

This paper forms part of EECARO's continuing contribution to an effective European export control framework. EECARO's papers on intangible technology transfers, the Commission's White Paper on Export Controls, research-security risk appraisal and R&D involving technologies with dual-use potential provide complimentary related perspectives. The complete set of published EECARO position papers is available at: <https://eecaro.eu/position-papers/>

Introduction

The current Regulation (EU) N° 2021/821 already acknowledges in its Recitals that academic and research institutions face distinct challenges because of their commitment to the exchange of ideas, work on cutting-edge technologies, organisational structures and international scientific exchanges. However, in the ensuing Articles it has limited considerations for the impact of the provisions to the research context. The control provisions remain largely industry and transaction focused.

Commission Recommendation (EU) N° 2021/1700 has helped to make the application of export controls to research more visible, but research organisations still need more practical direction on implementation.

Additionally, export control compliance remains largely disconnected from the principal instruments (funding and evaluation) that shape day-to-day research. To encourage a more systematic integration of export control considerations, researchers and research organisations could be incentivised to incorporate appropriate compliance measures into specific funded research projects involving dual-use items, including through dedicated budget provisions where necessary. In addition, proportionate compliance efforts by researchers should be recognised as a contribution to responsible and trustworthy research practices. The relevant government services at EU and national levels could therefore further develop both the policy narrative and the associated recognition and reward mechanisms that acknowledge and support export control compliance by researchers.

Universities and research and technology organisations undertake research activities in various forms, from fundamental research to industry focused research, from experimental development, prototyping and testing to low volume manufacturing in various collaboration constellations with other research organisations and industry players. The research output also varies significantly, from scientific articles, presentations, raw data, generic methodologies, intermediate or unsuccessful results, software, prototypes and technical know-how. Relevant technical characteristics may emerge only during a project. International collaboration can involve guest researchers, European consortia, temporary exports and shared digital environments. These characteristics require an implementation model that is clear, risk-based and capable of dealing with technical uncertainty.

EECARO is not asking for research to fall outside export controls. The rules should, however, distinguish between a dual-use item with demonstrated capability and research that may produce such capability later. When specific proliferation, military end-use, weapons of mass destruction (WMD), cyber-surveillance or public security concerns are known, research organisations must investigate and act. Where the

technology, performance, recipient or end-use is not yet sufficiently defined, the export control system should not apply the same control provisions, including licensing, internal compliance measures and due diligence requirements. The research security approach could be more fit-for-purpose to address these situations with technical uncertainty.

Uneven application across EU Member States

Research organisations report significant and persistent differences in how national competent authorities interpret and apply the Regulation in a research context. This results in a patchwork of approaches to scientific publications, technology controls, technical assistance, execution of funded projects, and the decontrols for basic scientific research and the public domain. This creates legal uncertainty and an uneven operating environment for cross-border research.

The Commission and the EU Member States should develop common interpretations of listed-item definitions and recurring research concepts. These should cover Annex I terminology, the threshold for controlled technology, intangible transfers, cloud computing, scientific dissemination, guest researchers and collaborative projects. For projects involving several Member States, authorities should seek harmonised classification so that controlled research items can continue to be exchanged. This harmonisation of approaches becomes particularly relevant in a time of increased funding for dual-use and defense applications and use cases where authorities seem to differ in classifying research items under dual-use export control rules and military export control rules. The harmonisation does not necessarily need to result in the convergence towards the strictest approach across EU Member States, but towards the best-fit approach to the risks that need to be covered via the export control instrument.

Classification before the technical characteristics are known

A recurring problem is the need to classify research before its technical result is known. The characteristics needed to assess an Annex I entry may not yet have been demonstrated or validated. A prototype may need testing to establish whether it meets a performance threshold, yet that testing may itself require a transfer or temporary export.

EECARO recognises that Annex I draws on technical descriptions agreed in multilateral export-control regimes. Their effect on research depends both on how they are drafted and on whether research and innovation were considered during this drafting. Their multilateral origin should not prevent the EU from making implementation consistent, proportionate and workable for research. Even where the controls themselves cannot readily be changed, the EU and its Member States can provide predictable interpretation and practical routes to compliance.

The Regulation or its technical guidance should clarify that classification is based on the actual state of the item, software or technology at the time of (intended) transfer. For

prototypes and experimental items, a performance parameter should be treated as fulfilled only where it has been demonstrated through testing or can reasonably be established from the technical design. An anticipated, aspirational or merely theoretically possible performance should not by itself determine classification.

Experimental research and development

The existing decontrol scope for “basic scientific research” is vague and narrow. Recommendation (EU) 2021/1700 uses Technology Readiness Levels (TRLs) as an indicator, but research organisations find this difficult to apply in practice because:

- There is no fixed rule to determine the TRL(s) within a project and its deliverables.
- TRLs rarely can be generalised for an entire project and its project deliverables. Publicly funded projects often contain various TRL level activities and deliverables.
- TRLs 1 and 2 are uncommon as an overall classification for EU or national projects. TRLs 3 and 4 are common, and higher levels are not unusual.

EECARO sees added value in highlighting the notion of ‘experimental research and development’ where the technical characteristics necessary to determine whether the resulting item, software or technology meets a control threshold have not yet been demonstrated or validated. This would cover research activities for which technical characteristics, performance, functionality or other properties are not yet sufficiently determined for a meaningful Annex I assessment. This would expand the notion of “basic scientific research” into a broader set of research activities that pose low risk for export controls but is currently not clearly exempted from its controls.

The boundary of controlled technology

Research organisations need clearer guidance on when research information is technology “required” for the “development”, “production” or “use” of a listed dual-use item. Performing research in a dual-use field or involving dual-use items does not mean that every presentation, repository, dataset or result contains the specific information needed to achieve an export controlled characteristic.

The Technology Notes or research guidance should make clear what type of scientific knowledge, intermediate results, (un)successful experiments, generic processes and raw data should be treated as controlled needed to realise the controlled characteristics of a dual-use items. In other words, it should made clear whether the information from research needs to be evaluated against all subtypes of “development” or “production”, or only against its capability to be able to make the controlled dual-use item. By contrast, the cumulative and thus closed definition of “use” should only result in limited number of cases that invoke a licence requirement for the “use” of controlled technology.

Intangible transfers, the export and the exporter

EECARO calls for clearer and equal rules on intangible technology transfers in cloud environments and on the meaning of “export” and “exporter” in research that is performed in a digitally connected world. Controlled “technology” should be distinguished from the infrastructure used to store, host or provide technical access to it. Updated guidance should explain this distinction through practical examples on cloud use, remote access and research collaboration.

Having to request a licence for the transmission of controlled “technology” to a third country service provider and subsequent licence request(s) for the actual making available from this third country server provider within a research project is a disproportionate administrative burden considering the risk level of these transfers. EECARO's view is that the export occurs when controlled technology is made available, and that the exporter is the person who causes that release. Transmission to a server in a third country, or the technical provision of storage or hosting, should not in itself be treated as an export where effective information-security safeguards prevent unauthorised access. The revised provisions should reflect this distinction.

Scientific publications and dissemination

The classification and licensing of scientific publications remain a source of legal uncertainty. The evaluation offers an opportunity to address this without weakening the EU's export-control objectives. The United States and Japan provide clearer exemptions or guidance for publications intended for broad public access, whether through open access or journal subscriptions. Such publications have a different risk profile from a targeted transfer to a specific recipient. Licensing is therefore a poor fit as the main way to manage publication-related concerns.

If the revised Regulation does not resolve these issues, research organisations will need much clearer guidance. This should explain how to identify controlled technology in a publication; how to deal with transfers during drafting and peer review; who is the “exporter”; how to identify end-users in a licence application; and how the decontrols for “basic scientific research” and information “in the public domain” apply. Without greater legal certainty, authorities should also expect more publication-related questions and be able to answer them consistently and promptly across the EU.

Catch-all controls and research-related uncertainty

From a regulator's perspective, catch-all controls for non-listed dual-use items with specific end-use concerns are understandably a necessary part of the EU export control system. Their non-systematic nature in combination with a not harmonised approach across the EU, however, creates legal and implementation uncertainty. The mere scientific possibility that research might one day produce an item suitable for a

controlled end-use should not amount to knowledge or awareness of an intended end-use, and should not by itself trigger a catch-all control.

Articles 4 and 8 target defined risks, mainly those linked to weapons of mass destruction and military end-use in destinations subject to an arms embargo. Member States nevertheless take different approaches to military end-use concerns outside embargoed destinations. This reduces predictability and creates an uneven playing field. The evaluation should consider whether a more harmonised and transparent approach is needed for civil-military integration programmes in countries that the Union identifies, on objective grounds, as presenting greater security risks.

Collaborative research: licensing, dual-use flagging and dual-use by design

The licensing challenges in collaborative research are well documented¹. They include uncertainty about quantities and partners at the proposal stage, licence periods that do not match project duration, consortium-wide end-use statements and compliance coordination, and tension between open-access requirements and licence conditions.

The evaluation should also clarify how Article 11.9 of EU grant agreements should be handled where export-control restrictions affect project execution. Currently, the provision outlined in this Article is very much focused on industry practices of exchanging commercial documents.

Collaborative projects may involve temporary exports, technology exchange, partners in several jurisdictions (worldwide, including associated partners) and public funding. Some eligible partner countries in Horizon Europe or European Defence Fund projects are not included into EUGEA001. A general authorisation designed for research could facilitate controlled temporary exports and exchanges with approved institutions in those specified countries. Such a research-focused EUGEA could further detail a proportionate internal compliance programme, documented project screening, sanctions and end-user checks, exclusion of prohibited WMD and military end-uses, recordkeeping and review at defined technical milestones.

There is confusion amongst regulators and research organisations whether a ‘large project authorisation’ can be used for funded projects with partners in third countries. That authorisation was designed for industry, and several competent authorities do not recommend it for research organisations. The evaluation should clarify whether (or not), and under what conditions, it can serve the research sector.

¹ See for instance, European Commission: Directorate-General for Research and Innovation, *Unlocking the potential of dual-use research and innovation*, Publications Office of the European Union, 2025, <https://data.europa.eu/doi/10.2777/5771805>

EECARO strongly favours that for EU or nationally funded projects, an initial export control classification remains valid for the project unless the relevant facts materially change. As Annex I is a dynamic control list, there should be stronger cooperation between export control authorities and funding agencies to create awareness inside the relevant government agencies but also towards research organisations executing projects when significant changes to the EU dual-use control list take effect. The November 2025 update on quantum computing controls is a good example of how research projects already in execution may become subject to export controls.

EECARO supports a dual-use flagging mechanism for relevant funding calls. A clear flag would prompt research organisations to consider export controls from the start. It would help funders identify calls with dual-use potential or civil-military relevance, it would help applicants address export controls when preparing and running a project, and it would help authorities target guidance and oversight where they are most needed.

This requires careful terminology. 'Dual-use by design' can blur the difference between research that is subject to export control and research intended to benefit both civil and defence applications. References to civil-military interoperability or readiness should not be taken, on their own, as evidence that export controls apply.

Guidance that explains how to comply

Commission Recommendation (EU) N° 2021/1700 explains that export controls apply to research, but it often says what must be done without showing how to do it. Uncertainty remains around scientific articles, technical assistance to guest researchers, European consortia, basic scientific research, the public domain, patents, cloud use, quantum computing, catch-all controls and newer EU control entries.

The Recommendation should be updated to include more research-specific use cases and practical implementation examples, developed in close consultation with the research sector. It should set proportionate expectations for internal compliance programmes, taking account of an institution's size, structure and resources. Member States should also give organisations the basic support needed to apply the Regulation in practice.

The Recommendation could benefit from explaining how to deal with standardization activities performed by researchers. They participate in international standards development technical working groups, where the exchange of detailed technical information is necessary to develop interoperable technologies and (global) standards. Yet in practice, one is not always certain if such an exchange amounts to export-controlled technology or comes with export control obligations. That leaves doubt as to what can be put forward in a standards committee and on what terms. It is an uncertainty that has the potential to put the brakes on involvement in standardisation and dissuade researchers from playing a part in the making of new technologies and the standards that

go with them. What would be of use is more hands-on guidance from actual standardisation activities; it would allow these bodies to have the confidence to apply export controls properly and remain active in setting global standards.

Access to timely and authoritative decisions

Research institutions often have to classify technically complex work while the technology is still evolving. They need timely feedback from competent authorities, yet authorities may struggle to provide a clear view. Non-binding advice may not give a project the stable basis it needs for collaboration and later review.

Transparency of classification practice

Research organisations regularly face similar classification questions but receive different interpretations across the EU. This is particularly relevant for emerging technologies, scientific publications, intangible technology transfers and other research-specific situations where the application of export controls is not always straightforward. To improve implementation consistency, a searchable EU repository of anonymised classification decisions and interpretations for research cases could be established. The repository should provide practical examples, indicate the relevant control-list provisions and explain the technical considerations that informed the assessment, while protecting confidential and security-sensitive information. Greater transparency would help research organisations better understand how comparable cases have been approached elsewhere in the Union and would support a more harmonised application of the Dual-Use Regulation. It would also allow guidance material that is not so frequently updated to refer to such a repository with an illustrative cases catalogue.

Export control and research security

Export controls provide the legal basis for managing transfers of controlled items and technology and for addressing specific end-use and end-user risks. Research-security measures address broader concerns, including knowledge transfer, foreign interference, research integrity and strategic vulnerabilities. The two should work together without being confused or duplicated.

The Commission and the Member States should clarify the boundary between legal export-control duties and wider research-security measures. DG Trade and DG Research and Innovation should align their approaches, particularly in Horizon Europe, future research programmes and the European Defence Fund. This would reduce duplication and help projects identify their obligations early.

Conclusion

Europe needs both effective export controls and an internationally connected research base. These goals are compatible when the rules are clear, proportionate, risk-based

and consistently applied. The main difficulty for research organisations is not a reluctance to comply. It is applying product- and transaction-based rules to research whose technical outcome may still be unknown.

A research-fit framework would maintain close scrutiny where the risk is concrete. It would focus attention on the transfers, recipients, destinations and end-uses that warrant it, while giving responsible organisations a clearer and more workable route to compliance.

The research sector should be treated not only as a regulated community, but also as a partner to governments, industry and competent authorities. Researchers can help explain emerging technologies, their security implications and the risks that controls are intended to address. Regular, structured dialogue would support better controls and better-informed policy.

About EECARO

The European Export Control Association for Research Organisations (EECARO) brings together European research institutes, universities and export control practitioners to address the specific challenges of export controls in research. Its work also covers related issues such as research security and public funding for technologies with both civil and military potential. For more information, visit www.eecaro.eu or contact info@eecaro.eu.