CESAER

Input note

Topic	Clarifying and optimising civil, dual-use and defence research and innovation in future EU funding programmes
Date of note	26 March 2026
To	EU institutions and partners
From	CESAER

Executive summary

This input note responds to a growing and practical challenge in ongoing EU-level discussions: the concept of "dual-use" is currently applied too loosely and inconsistently. This creates avoidable confusion in the design of FP10, the European Competitiveness Fund (ECF), and the successor to the European Defence Fund (EDF), risking suboptimal programme architecture and outcomes.

The purpose of this note is therefore to clarify—not to redefine exhaustively—the conceptual and operational foundations. It provides a timely, experience-based contribution grounded in the extensive real-world expertise of universities of science and technology across Europe, which as a community have long operated across the civil–defence continuum.

The note introduces a clearer framing to address current ambiguities:

- Dual-use should be treated in two complementary ways: as a (1) **legal category** for compliance (well-defined and non-negotiable); and (2) **strategic pathway** to situate defence-relevance of specific research and innovation, and to make informed choices about developmental pathways
- For the strategic pathway, the concept of a **spectrum of defence-proximity or defence-relevance** should replace binary or vague interpretations. This enables proportionate, operational decision-making on where activities belong, and which type and level of restrictions apply.

This approach directly addresses several key points:

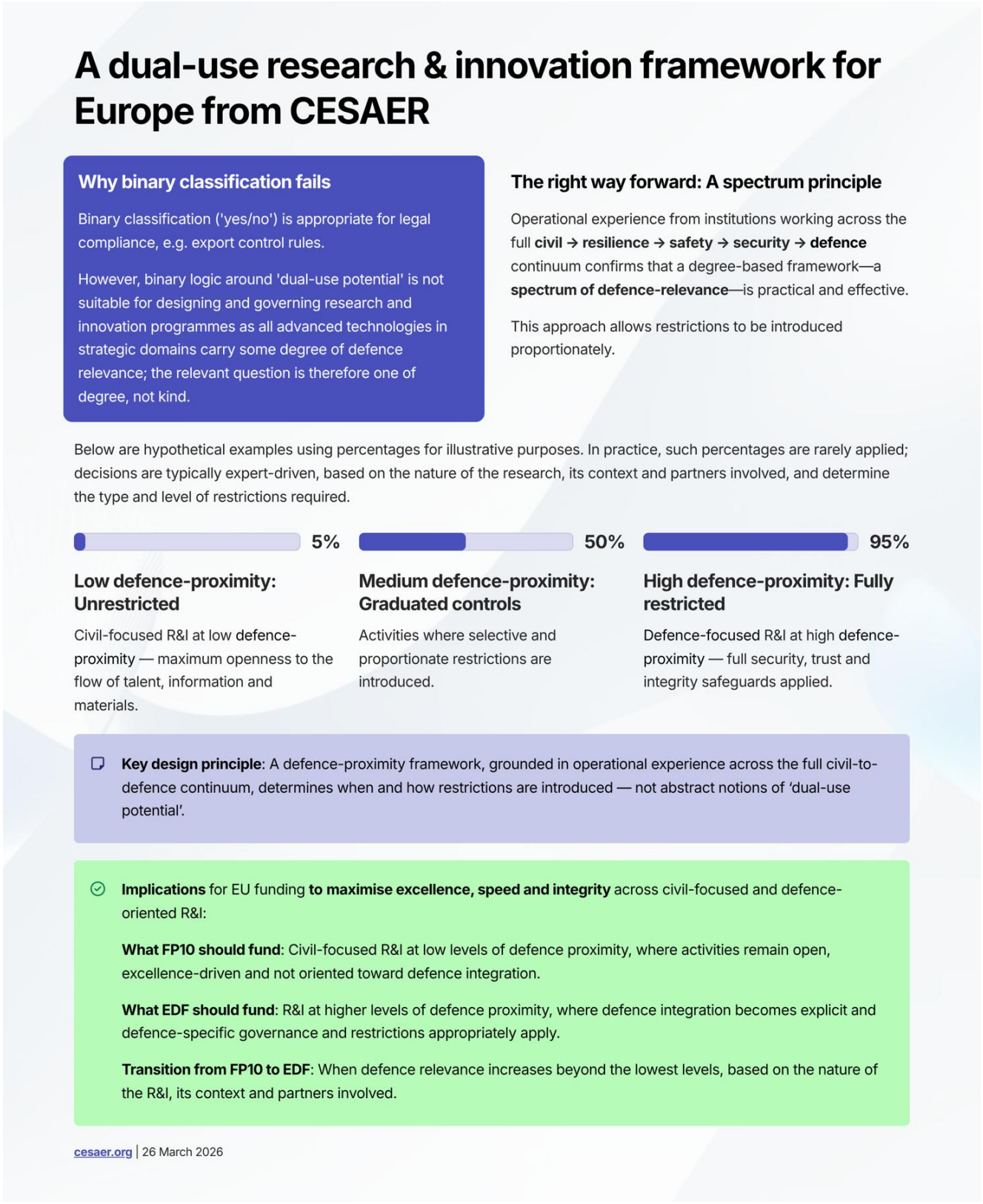
- It recognises that all advanced technologies in strategic domains have relevance for both civil and defence contexts.
- It avoids unnecessary complexity by providing a practical organising principle focused on the aspect to be governed (i.e. the type and level of restrictions needed), rather than abstract labels.
- It complements, rather than replaces, existing frameworks such as Technology Readiness Levels (TRLs), which are helpful but insufficient in themselves; for example, a high TRL does not in itself determine the level of defence relevance or defence proximity.
- It ensures that openness and collaboration are maximised where appropriate, while enabling proportionate restrictions where required.

While concrete examples of how decision-making frameworks based on defence relevance or defence proximity can be operationalised do exist, it is not the purpose of this note to examine these in detail. This note is not intended as a final or comprehensive framework; rather, it is an evolving contribution to a rapidly developing policy landscape. Its value lies in providing a clear, credible and operational basis to improve ongoing discussions and avoid conceptual confusion at EU level.

The measure of success for EU action should be explicit: to maximise excellence, speed and integrity across outcomes in all domains, from civil-focused to defence-oriented research and innovation.

Infographic

The image below provides a summary of this note.



Context

This input note re-emphasises and builds on the key messages of the CESAER position of 30 April 2024, 'Strengthen dual-use technologies by enhancing EU defence funding', which remains unchanged: **FP10 should continue to be a programme with a civil focus**, allowing the framework programme to continue to set the global standard for supporting excellent research & innovation and cutting-edge science & technology.

While we strongly welcome efforts to reinforce the European Defence Fund (EDF) and attract new participants — particularly more universities — to engage directly in its research and innovation activities, we continue to emphasise that **increased defence research funding should be pursued in the EDF, and must not come at the expense of FP10 budget or the civil focus of the framework programme**, both of which remain essential for Europe's long-term resilience, excellence, and global competitiveness.

The strategic urgency to clarify and optimise civil, dual-use and defence funding is real.

Preparations for FP10, the European Competitiveness Fund, and the successor to the European Defence Fund are unfolding amid rising geopolitical pressure and intensified debate on research security, resilience, and defence capabilities.

Current policy discussions, however, are undermined by conceptual ambiguity, particularly around the term dual-use. The core challenge is that "dual-use" increasingly serves multiple functions simultaneously: legal compliance, strategic funding design, ethical evaluation of research, and governance. In practice, this creates uncertainty for policymakers, researchers, innovators, and institutions alike, complicating programme architecture, blurring eligibility boundaries, and making it harder to calibrate openness, screening, and security requirements effectively.

This uncertainty is reinforced by legitimate debates over the appropriate balance between civil-focused and defence-focused research and innovation, and over which institutions should engage in which activities. In universities, such discussions must always respect institutional autonomy and academic freedom. This note does not revisit that debate. Instead, it focuses on the practical needs of actors with long-standing experience operating across the full civil–resilience–safety–security–defence continuum, offering two experience-based insights to support clearer policy and more strategic funding design and governance.

Building on earlier recommendations, this note puts forward concrete proposals to clarify and optimise the integration of civil, dual-use, and defence research and innovation into future EU funding programmes by treating dual-use in two complementary ways: as a legal category for compliance purposes ('export controlled'), and as a strategic pathway that helps identify when civil research may have potential defence relevance and how such research could, under appropriate conditions and governance, evolve along trajectories that include defence applications. In doing so, it draws on the experience of universities of science and technology, many of which have long engaged with these issues, often at national level.

Purpose

The purpose of this note is to provide clear, experience-based guidance from universities of science and technology on how to create optimal programme architecture for EU funding programmes, provide clear eligibility boundaries, while optimising appropriate synergies and links between programmes.

As a community, these institutions have long operated successfully at the interfaces between civil contexts, dual-use potential, and defence needs. Their experience shows that effective management of

dual-use research requires clearly defined objectives and governance tailored to the context. This reflects the fact that dual-use activities exist along a spectrum, from research with little or no defence relevance to activities closely integrated into defence capabilities and operational use.

Clarifying and optimising civil, dual-use and defence research and innovation in future EU funding programmes is essential for ensuring effective programme design and governance.

This note focuses on a key objective: maximising excellence, speed and integrity across outcomes in all domains.

The core problem

Dual-use is a legally defined category under EU and national export control law, and institutions are required to comply. However, in discussions related to the design and governance of funding programmes the term is sometimes used interchangeably with defence-related research, or as a proxy to avoid explicitly referring to defence-related activities within primarily civil-focused research and innovation programmes.

As a result, the term "dual-use" is being deployed in a number of different policy functions: legal compliance (export control and military list regimes); strategic funding and programme design (what belongs in FP10, ECF, EDF successor); and governance and oversight (what safeguards, review, security measures, dissemination expectations apply.) Using the same ambiguous label across these functions undermines all of them, creating uncertainty for policymakers, researchers, and institutions.

Although dual-use 'controlled' is a fixed legal category for compliance purposes, treating dual-use as a fixed, ex ante category across all policy functions misunderstands how frontier research and innovation actually work in practice. Cutting-edge science and technology development is exploratory, iterative, and inherently uncertain.

Solution: a clearer framing with dual-use as (1) a legal category and (2) a strategic pathway

In strategic domains, virtually all frontier science and advanced technologies have a potential for civil and defence application and therefore could be considered to be of 'dual-use potential'.

Dual-use must therefore be treated in two complementary ways:

1. **'Dual-use controlled' as a legal category** for compliance purposes (including export control and defence technologies and equipment regimes). The legal meaning of "dual-use" in this context is well established in EU and national export control laws in accordance with EU Regulation 2021/821, and institutions follow their Internal Compliance Programme with respect to ensuring legal compliance.
2. **Dual-use as a strategic pathway** to situate defence-relevance of specific research and innovation, and to make informed choices about developmental pathways. Researchers and innovators may choose, adapt, or abandon such pathways over time as knowledge, markets, partners and contexts evolve. Treating dual-use as a strategic pathway in such contexts enables research to remain exploratory, making use of institutional expertise, and supporting accelerated and responsible technological development, rather than being constrained by rigid rules or static categories.

The governance challenge for EU funding programmes

Policymakers should not try to solve dual-use ambiguity and misunderstanding by multiplying labels such as "dual-use by design", "dual-use by default", "dual-use by application" and similar. The practical

reality is that research and innovation pathways can evolve, split, and run in parallel as opportunities and risks become clearer, and the governance and oversight should reflect this. Outside the context of legal compliance, the governance challenge to be solved is therefore not how to label and define activities with rigid categories, but how to ensure that governance frameworks enable institutions to manage transitions between civil and defence-oriented pathways effectively and ethically.

Two governance failures must be avoided:

- **Over-including dual-use**: placing all potentially relevant research in a single "dual-use" framework burdens civil research with disproportionate constraints and increased complexity, restraining openness and disadvantaging scientific collaboration, thereby risking slower and lower-quality outcomes without improving integrity.
- **Over-fluidity of dual-use**: treating dual-use as entirely fluid ignores that, for compliance purposes, dual-use 'controlled' remains a legal category with real compliance obligations for institutions.

The solution is not a single overarching definition that tries solving all ambiguity, or constrains basic research solely because of hypothetical dual-use potential which is inherent in frontier research and advanced technologies. The solution is an operational framework that keeps legal clarity intact while enabling strategic flexibility in programme design and governance.

Recommended operational framework for FP10, ECF and EDF

We propose a European model built on two mutually reinforcing components to address the governance challenge presented:

1. Legal clarity in call texts where feasible to enhance legal certainty, compliance and predictability.
2. A defence-proximity scale as a strategic framework for programme design and governance.

1) Legal clarity in call texts

Open and competitive calls, with non-prescriptive approaches as the default for awarding funding in FP10, must remain the guiding principle, as non-prescriptive approaches is the most effective way to ensure efforts are positioned at the cutting-edge of science and technology.

To enhance legal certainty, compliance, and predictability, the European Commission should, where feasible, flag regulated items, technologies, and equipment upfront in call texts for EU funding programmes.

Where feasible, call texts could indicate whether the funded activity is expected to fall within one of the following categories:

- **Not covered** by EU export control regulation (Regulation (EU) 2021/821) and **not covered** by EU common rules on the control of exports of military technology and equipment (Council Common Position 2008/944/CFSP) or
- **Likely to be covered** by EU export control regulation (Regulation (EU) 2021/821) in TRL 3+
- **Covered** by EU common rules on the control of exports of military technology and equipment (Council Common Position 2008/944/CFSP)

Such upfront signalling could provide guidance and improve predictability and clarity for applicants and institutions, helping them anticipate potential compliance requirements while maintaining open and non-prescriptive calls. This approach does not replace the responsibility of EU member states, which retain the authority to enforce export control laws and decide whether a licence is required.

In practice, such an approach could help avoid deferring potential risks to later stages of the grant process, support consistent signalling across programmes, and provide a clearer foundation for applying a defence-proximity framework at strategic programme design and governance levels.

In some cases, detailed classification may not be possible at call stage. Risk-informed assessment and safeguards could then be applied once project-specific details are available, using practical and effective procedures that seek to **maximise simplification, clarity and speed for beneficiaries**.

The proposal above illustrates a possible way to enhance legal clarity. We stand ready to work with EU institutions to further elaborate and refine practical approaches that ensure clear, effective and proportionate approaches to ensure compliance.

2) Defence-proximity to strategically design and govern research and innovation programmes

Technology Readiness Levels (TRLs) measure technological maturity and, while helpful, are not intended to capture degree of defence-relevance. As such, TRLs alone are insufficient for guiding governance, programme allocation, or safeguards in this context for EU funding programmes. For activities spanning the civil-to-defence continuum, programme design and governance should therefore consider defence-proximity.

Operational experience from institutions working across civil and defence contexts shows that activities can be organised along a **spectrum of defence-proximity**. This framework is useful because it captures what governance needs to distinguish: closeness to defence integration, thereby treating dual-use as a strategic pathway rather than simply a measure of technology maturity or an ambiguous catch-all category. At the lowest levels of defence proximity, civil-focused research and innovation benefit from maximum openness, allowing the excellence drivers — the flow of talent, technologies, materials and knowledge — to operate fully. As defence-proximity increases, proportionate and selective restrictions begin to apply to safeguard security and trust. At the highest levels, where defence integration and operational capability are the objective, fully restricted operating conditions are necessary.

Several universities of science and technology have long applied similar spectrum-based approaches when managing research across civil-to-defence domains. Many of these practices remain internal. CESAER is therefore engaging with Members to collect and synthesise existing good practices across Europe, with a view to helping develop a practical framework grounded in operational experience. In practice, decisions are typically expert-driven, based on the nature of the research, its context and partners involved, and determine the type and level of restrictions required.

One of the few publicly available examples of a comparable approach is the Dual-Use Readiness Levels framework developed at the Massachusetts Institute of Technology (MIT) for early-stage ventures (see https://dualuse.mit.edu/). While developed in a different institutional and policy context, it illustrates how a structured scale can help assess defence-relevance and guide governance decisions. It should therefore be understood as an illustrative example rather than a model to replicate: a European version would need to reflect the EU funding landscape, institutional settings, public procurement realities, and partner countries associated to FP10 and the EDF successor.

Applying a defence-proximity perspective to EU programme design and governance supports clearer allocation of activities across instruments. **FP10 should support civil-focused R&I** at low levels of defence-proximity, where activities remain open and excellence-driven, with research security measures proportionate to its low defence-proximity. Defence-focused instruments such as the **EDF successor should support activities at higher levels of defence-proximity**, where integration and associated

restrictions apply. As activities move along this spectrum, restrictions can be calibrated proportionately. A transition from FP10 to EDF can be envisioned when defence relevance increases along the defence-proximity spectrum beyond the lowest levels, based on the nature of the research, its context and partners involved, which determine the type and level of restrictions required.

Maintaining separate architectures for FP10 and the EDF successor is essential, as merging civil- and defence-oriented research would slow progress and weaken outcomes across both domains. This approach also enables structured pathways for defence-oriented development, fostering appropriate FP10–EDF synergies such as spin-ins from civil-focused research into defence-related activities, and spinouts from defence-focused innovation towards civil-oriented markets, as advocated in CESAER's April 2024 position on strengthening dual-use technologies.

Conclusions and implications for EU programme design

Dual-use should neither be absorbed into a single ex ante regulatory category, nor left to evolve without structure across EU programme design.

A European model for strategic design and governance of FP10, the ECF and the EDF successor that maximises excellence, speed and integrity across outcomes in all domains combines two components: legal clarity in call texts; and a spectrum of defence-proximity.

This approach aligns strategic flexibility with legal certainty. It leverages the benefits of open collaboration in civil-focused research while enabling proportionate and operational research security safeguards. Where defence integration is the objective, it maintains a clear mission focus. It also provides institutions and research support staff a practicable framework for managing research and innovation across the civil–defence spectrum grounded in tried-and-tested practice.

To turn these principles into practice, it is essential to incorporate the experience of frontrunners such as universities of science and technology.

We stand ready to support EU institutions in shaping an operational framework that clarifies and optimises civil, dual-use, and defence research and innovation in future EU funding programmes to maximise excellence, speed and integrity across outcomes in all domains: from civil-focused to defence-oriented research and innovation.

Please contact our Advisor for Research Vincent Klein Ikkink for more information.

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