DUAL-USE FORUM

POST-EVENT REPORT

Bridging Innovation and Deployment:
Challenges and Opportunities to supercharge the Alliance's Defence, Security and Resilience

hello tomorrow | NIF | KEEN | JOIN. CAPITAL

Expeditions | OTB Ventures | McKinsey & Company | techleap

DUAL-USE FORUM

POST-EVENT REPORT

The inaugural Dual-Use Forum, held at the Hello Tomorrow Summit 2026, examined the conditions required to translate Europe's strong base of dual-use innovation into deployed capability at scale. The discussions highlighted that the principal constraint is not the availability of promising technologies, but the ability to move them through validation and industrialisation into scaled cross-border adoption. Addressing these barriers will require closer alignment between Allied demand, capital and industrial partnerships.



This post-forum report identifies four opportunities to unlock the full potential of NATO nations' DSR ecosystems[1]:

1. **Receiving clear demand signals from governments**
2. **Closing the gaps between testing, procurement, and scaled adoption**
3. **Addressing challenges in accessing scale-up capital**
4. **Empowering startups to scale across the Alliance**

1. At the 2025 NATO Summit, leaders made a historic commitment to shared transatlantic security announcing an increase in annual defence spending to 5% of GDP: 3.5% for traditional defence and security and an additional 1.5% for resilience including the protection of networks, civil preparedness, and innovation in the industrial base.

THE DSR ECOSYSTEM: CHALLENGES AND OPPORTUNITIES

Across six roundtables, the Dual-Use Forum identified four key themes shaping the transition from technology development to scaled deployment.

Together, they highlight the structural challenges and opportunities across the DSR ecosystem.

1 RECEIVING CLEAR DEMAND SIGNALS FROM GOVERNMENTS

Founders need clear, timely and 'problem-first' demand signals to develop solutions that respond to operational needs.

Governments should express demand as expected outcomes rather than products. That demand also needs to be coherent across ministries, end-users and procurement teams, with a clear pathway to procurement decision makers, including for exercises, pilots and larger contracts. Civilian and military markets impose very different requirements on cost, robustness and certification**.** While defence customers prioritise assured performance, security, interoperability and formal qualification, civilian customers typically gravitate toward lower prices and ease of use. **Developing separate products for each market can be complex and costly. Where feasible, startups should engineer to the higher defence requirement from the outset**. However, in many cases, the path to building credibility for the defence markets starts with validating the product and earning revenue in the civilian market first. This will allow them to assemble the evidence base of testing, certification and references that a defence buyer will require, as well as self-sustaining operations through recurring revenues, while preparing for longer sales and procurement cycles in the defence market.

Startups' voice needs to be reflected more consistently in capability planning across the Alliance.

Current procurement mechanisms and budget cycles are not fit for the rapid acceleration of technology, or for the meeting of strategically-significant, high-consequence security and resilience need. Engineered biology is one example: while rarely prioritised, its civilian and defence applications are significant. Rapid front-line diagnostics, for instance, serve public health and emergency preparedness alike.

Giving greater consideration to emerging technologies in capability and budget planning would help create clearer routes to testing, procurement and adoption. **Governments should also accept proportionate investment risk, calibrated to the maturity of the technology.**

2 CLOSING THE GAPS BETWEEN TESTING, PROCUREMENT AND SCALED ADOPTION

Startups need to validate, test and iterate their products in ranges, testbeds, sandboxes and exercises; yet such access is often limited.

Strict regulatory environments can also inhibit test opportunities across much of Europe. Governments should fund real-world testing facilities, expand access, review regulations and give startups direct access to end-users.

Enabling access to military exercises and operational feedback loops, as well as making testing and certification interoperable across Allied countries, would meaningfully help inform founders on how to ensure their solutions meet the current pressing needs of end-users.

Successful pilots do not consistently translate into procurement or recurring revenue.

Where pilots are intended to support adoption, they should be linked from the outset to clear evaluation criteria, budget ownership, decision points and potential follow-on procurement pathways. Instruments such as conditional purchase orders, letters of intent and capacity-reservation models can carry companies across that gap, giving them a credible route from experimentation to acquisition.

Government and defence buyers assess both technology readiness and whether a company can credibly deliver and support its solution over time.

That confidence is built through testing, field trials and engagement with operators. **Government should therefore provide startups with better access to end-users and decision makers, and place greater emphasis on demonstrated performance in live trials rather than lengthy paper-based submissions.**

Navigating complex government procurement mechanisms remains a key constraint for startups.

Fixed-term, document-heavy tenders lock out new entrants and freeze the market for the life of a contract. Complex certification, legal, compliance and procurement requirements absorb resources that early-stage startups cannot spare. When publishing tenders, governments should focus on clarity of payment schedules, explicit IP terms, exclusivity rights and demand expressed as the effect sought. More flexible procurement routes and budget cycles, as well as a credible commitment that runs beyond the pilot, would open genuine competition to new entrants and reward capability over incumbents.

Decentralising decision-making so innovation teams carry real authority and budget, while separating procurement from testing and development, would allow demand for breakthrough technologies to match the pace of innovation within NATO and its adversaries.

Procurement timelines are out of step with startup innovation cycles.

Startups working close to the front line in Ukraine are iterating their product in days and weeks, while legacy acquisition programmes can run for years. **Procurement should allow startups and scale-ups to test, iterate and win at pace, and institutions should adopt some of the startup mindset themselves**.

DSR needs startup DNA: moving quickly and capturing value through higher acceptance of calibrated risk and a speed-over-hierarchy approach.

That requires the right culture, founder-calibre talent inside institutions, and competitive pressure to innovate.

Faster routes already in use elsewhere, such as performance-based selection through live demonstration and software-first contracting, point the way.

Recent initiatives are beginning to support that shift.

The European Defence Industry Programme can support more coordinated demand and procurement across Member States [1][2]**, while NATO's Rapid Adoption Action Plan is designed to reduce the time between successful demonstration and operational deployment** [3]**.**

However, their value will ultimately depend on whether they create clearer routes to contracts, reduce duplication across markets and give startups a more credible path to scale.



3 ADDRESSING CHALLENGES IN ACCESSING SCALE-UP CAPITAL

European capital markets are fragmented and difficult for founders to navigate.

Although capital may be available, startups often have to piece together funding from national and EU grants, bank debt, institutional investors and corporate venture capital.

For DSR startups specifically, accessing the right combination of funding at each stage of growth remains particularly challenging, constraining their ability to scale. Part of the problem sits upstream, in the broader European venture capital market: European pension funds, for example, allocate less than 0.1% of assets to venture capital, compared with over 10% for US pension funds allocating to private markets [4], which limits the pool of capital available to DSR companies in particular. At the same time, DSR businesses can be difficult for banks to finance: due diligence may require access to classified information, revenues are often dependent on complex and lengthy defence procurement processes, and high valuations are not always matched by committed contract value, which can make them too risky for banks [5].

Addressing these challenges will require making DSR opportunities easier for investors to understand, assess and approve. Environmental, Social and Governance (ESG) policies should be updated to clarify how responsible, secure and treaty-aligned DSR technologies can be assessed. Clearer regulatory guidance, shared terminology, benchmarks and reporting standards should be developed, so that institutional investors can evaluate dual-use funds more consistently.

The capital gap is most acute at the point of industrialisation.

Moving from a validated prototype to production at scale is the most capital-intensive stage of a DSR company's journey, yet it is where the financing stack is thinnest. Progressing from TRLs (Technology Readiness Levels) 6-7 to operational deployment remains difficult, and startups may face pressure to scale before they are ready. Adapting a commercial product for defence use can mean revisiting earlier development stages, extending the period in which ventures must fund industrialisation without recurring revenues.

Earlier support for technology validation, clearer pathways from innovation to procurement, and pan-European financing mechanisms for industrial scale-up would send stronger market signals to both investors and founders.

Intellectual property (IP), ownership and strategic autonomy are often addressed too late in the startups' prime or government relationship.

Once a startup's technology is built into a larger system, ownership of the combined IP and its licensing terms are often left unresolved, leaving the startup with limited rights to sell it elsewhere. The tension is structural, as integrators want access to data and designs for assurance, which is exactly what the startup needs to withhold.

Agreeing upfront on IP ownership before any prime or supply-chain agreement and defining what will be shared and what stays protected, can help startups to preserve both their strategic autonomy and long-term independence.

4 EMPOWERING STARTUPS TO SCALE ACROSS THE ALLIANCE

The DSR marketplace across NATO nations is fragmented, creating burdensome procurement routes for startups and limiting their opportunities to scale.

With multiple national procurement entities and similarly fragmented interoperability standards, founders struggle to secure sales across multiple governments. Common standards and data architectures, shared certification, clarity on best practices, exportability within trusted allies and modular interfaces should be built into calls and contracts early.

Although not specific to defence, initiatives such as the proposed EU-INC[2] framework could help reduce some of the legal and administrative barriers that limit cross-border scaling.

Militaries, governments and commercial actors must coordinate more effectively across the Alliance and across operational domains.

Governments often default to backing a national champion, which further splinters demand and duplicates industrial effort. Challenge-based programmes, cohorts and national cluster models pull industry, government, universities and capital together around clearly defined demand, which speeds development and adoption and pulls against that fragmentation.

The Alliance should build trust through small, deliberately limited cooperation projects rather than reaching for large-scale integration too soon.

Startups can work together to engage multiple governments.



Startups seeking defence and government customers need to identify and manage security risks across their ownership, investment, governance and supply chain, as these factors determine eligibility for procurement and for integration into larger systems.

Employees, supply chains or investors from particular geographies can prevent a company from eligibility for government procurement, no matter the quality of the technology. The level of scrutiny should match the sensitivity of the programme, and the questions are best settled before a round closes.

Once those requirements are met, startups also need effective routes into procurement, certification, integration and delivery. **Defence primes can help companies navigate these processes and access government markets,** without absorbing ventures prematurely or forcing them into legacy operating models. However, startups need options if they are to remain product companies rather than subcontracted engineering teams.

Cohort and cluster models, such as NATO's Defence Innovation Accelerator for the North Atlantic (DIANA), bring innovators through a structured programme alongside operational end-users, test facilities and prime contractors, shortening the distance between an emerging technology and a deployable capability.

[2] EU–INC — One Europe, One Standard

CONCLUSIONS & KEY TAKEAWAYS

Europe's dual-use ecosystem has a strong base of innovation, but translating promising technologies into deployed capability at scale remains a significant challenge.

The Forum identified a set of priority actions for governments, primes, investors and startups to address the persistent barriers across demand, procurement, financing and cross-border adoption.

- **Governments should move from prescriptive specifications to problem-led, outcome-based demand, reserving long-term budget without dictating the solution in advance**. This must be backed by credible demand signals: letters of intent, conditional purchase orders, and official statements of required capability, underpinned by a culture of moving fast, taking calibrated risk and embracing innovation. A more distributed decision-making by authoritative points of contact with subject matter expertise can help accelerate adoption - from exercises to pilots and contracts. The release of NATO's Aggregated Demand Signal is a critical step in that direction [6].

- **Primes should give startups a genuine choice between partnership and acquisition, as both can deliver good outcomes, rather than defaulting to one path**.
  Where a relationship stops short of acquisition, primes should give startups real access to procurement, certification and integration expertise, without forcing them into legacy operating models or reducing them to subcontracted engineering teams.
  IP ownership, licensing terms and data-sharing boundaries should be resolved early and explicitly, before any prime or supply-chain agreement is signed, so startups have clarity over what they can sell elsewhere. Primes should also engage through cohort and cluster models that bring operational demand, prime contractors and innovators into closer contact.

- **Investors should press policymakers for the regulatory and fiduciary clarity needed to unlock institutional capital**, particularly from pension funds, for VC and DSR allocations. This may require fiduciary changes, ESG policy reviews and robust responsible investment infrastructure and opportunities. The priority is then to sequence the capital stack across fragmented national and European systems, help portfolio companies navigate each stage of funding, build trusted assessment frameworks for defence businesses despite classification constraints, and create sufficient private-market liquidity so founders are not forced into a single exit route.

- **Startups want to develop dual-use into their commercial strategy from the outset, build procurement fluency in-house and design for modularity and integration.**
  Leveraging the pace and requirements of the commercial markets first can help ready them for the stricter demands of government markets. A focus on data governance, export control and IP issues should be factored in from the early stages of growth, as well as ensuring security reviews of potential investors, employees and supply chains for hostile state interference.

ADDITIONAL REFERENCES

[1] European Defence Industry Programme, final approval by the Council of the European Union, 8 December 2025: consilium.europa.eu

[2] European Defence Industry Programme eligibility, at least six member states or four where security risk is high (European Parliament legislative train): europarl.europa.eu

[3] NATO Rapid Adoption Action Plan, 25 June 2025: Nato.int

[4] European Women in VC, Pensions for Purpose and Venture Connections, Venture & Growth Capital in Europe: Mapping Pension Funds' Attitudes (Pensions for Purpose, October 2025): pensionsforpurpose.com

[5] The prudent-man rule under United States pension law clarified in 1979 (NPR Planet Money, and NBER working paper w6906): npr.org

[6] NATO's Aggregated Demand Signal. (2026): https://www.nato.int/en/work-with-us/business-and-project-opportunities/demand-signal



To learn more, visit **HelloTomorrow.org**