



EXCERPT FROM THE
PROCEEDINGS
OF THE
TWENTY-FIRST ANNUAL
ACQUISITION RESEARCH SYMPOSIUM

**Acquisition Research:
Creating Synergy for Informed Change**

May 8–9, 2024

Published: April 30, 2024

Approved for public release; distribution is unlimited.

Prepared for the Naval Postgraduate School, Monterey, CA 93943.

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The research presented in this report was supported by the Acquisition Research Program at the Naval Postgraduate School.

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Bridging Sectors Over the Valley of Death: How DIANA's Dual-Use, Commercially Minded, and Process- Oriented Procurement Strategy Will Help Maintain NATO's Technological Edge

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Abstract

The North Atlantic Treaty Organization (NATO) has launched the Defense Innovation Accelerator for the North Atlantic (DIANA) – a unique effort among NATO partners to harness emerging technologies for the Alliance's collective defense. DIANA relies on a network of accelerators and test centers across the NATO Alliance to identify, demonstrate and validate novel solutions, with support from scientists, investors, industry partners, end users and government procurement experts. DIANA will focus on key technologies such as big data, artificial intelligence (AI), autonomy, quantum, biotechnologies and human enhancement, energy and propulsion, novel materials and advanced manufacturing, hypersonics and space, with an emphasis on dual-use (civilian and defense) technologies which can be used to address emerging defense and security challenges. DIANA's board of directors, which is responsible for governance, includes representatives from every NATO country. This paper will explore the special procurement challenges presented by DIANA to ask how best to achieve DIANA's critical goals. The primary area of investigation will be into existing models for defense innovation in the U.S. Defense Department and the European Union, and the research methodology also will look to primary (directives, laws, trade agreements and the *acquis communautaire* [the accumulated body of European Union law and guidance]) and secondary sources to recommend optimal procurement strategies to meet NATO's unique requirements. The research goal is to facilitate this and future efforts in shared defense innovation to ensure that NATO maintains its technological lead in an increasingly hostile security environment.

Introduction

The recently published *Annual Threat Assessment of the U.S. Intelligence Community* has recognised that

[n]ew technologies ... are being developed and are proliferating at a rate that makes it challenging for companies and governments to shape norms regarding civil liberties, privacy, and ethics. The convergence of these emerging technologies is likely to create breakthroughs, which could lead to the rapid development of asymmetric threats.... [The] competition also exploits technological advancements ... to gain stronger sway over worldwide narratives affecting the global geopolitical balance, including influence within it. (Office of the Director of National Intelligence, 2024, pp. 30, 6)

Similarly, the U.S. National Defense Industrial Strategy notes that

adversarial domination of critical markets allows ... control of commodity pricing and access to materials in strategically critical areas.... Much of the civilian manufacturing sector and some of the defense sub-tier supply chain has moved



offshore into a range of foreign producers, some of whom have become adversarial states ... [leading to concern] that predatory adversarial investment and acquisition strategies, often focusing on critical or innovative technologies, further weaken U.S. industrial supply chains and the defense industrial ecosystem's ability to provide capabilities and secure sensitive technologies. (Department of Defense [DoD], 2023, p. 44).

Across the Atlantic, the new European Defence Industrial Strategy highlights that

[a]dversaries have engaged in a global race for technological supremacy.... Strategic competitors are investing heavily in military capabilities, defence industrial capacities and critical technologies, whilst the integrity of our supply chains ... can no longer be taken for granted. ... [As such a] technological cutting edge and capacity to steadily guarantee the availability of any defence equipment are prerequisites to the ability of the Union to guarantee the effectiveness of its Member States's armed forces and thereby to preserve peace on the continent. (European Commission, 2024, pp. 2, 3, 31)

In short, there is broad agreement that a critical transatlantic defence and security challenge is the need to access more existing and emerging commercial technology and capacity, more quickly.

In response to this challenge, and to sharpen NATO's technological edge, NATO Allied heads of state and government endorsed the launch of the NATO Defence Innovation Accelerator for the North Atlantic (DIANA). "DIANA will accelerate emerging and disruptive technological solutions – particularly technologies primarily geared for commercial markets that also have potential defence and security applications ('dual-use')" (DIANA, 2022), enabling Allied nations to work "together with the private sector to adopt and integrate new technologies and shape standards" (DIANA, n.d.-a). This article will demonstrate the potential of DIANA to complement existing procurement systems and efficiently provide for the adoption of new, commercial technologies by defense and security end users within the NATO Alliance. While presenting the operational model of DIANA, special attention will be given to the "Rapid Adoption Service" – DIANA's constituent element intended to support agile and rapid development and adoption of innovative solutions by Allies and NATO. DIANA will operationalize the Rapid Adoption Service through a single set of rules supporting a contracting vehicle that can be utilised by multilateral, multinational, and bilateral consortia to continue development and eventually procurement of innovative solutions, directly or through partner NATO elements such as the NATO Support and Procurement Agency.

This article will proceed in eight parts. Strategic Harmonization and Synergy discusses the internationally recognised role of innovation in public procurement, NATO's goals in launching the DIANA initiative to foster innovation in dual-use technologies, and how DIANA's work will be guided strategically. Capability Driven Dual-Use discusses how dual-use technologies will be vetted through DIANA's "Challenge Programmes" to ensure that they meet the needs of NATO and of the broader market. Harmonized and Agile Procurement reviews DIANA's Rapid Adoption Service, which will allow DIANA to facilitate harmonized and agile procurement. Standardization, Interchangeability and Interoperability discusses how DIANA will advance standardization and interoperability, leveraging commercial solutions to improve defense security across NATO. The sixth part, Protected, discusses DIANA's strategies for taking up innovative and strategically important technologies to protect those technologies from potential adversaries. New Production Capacities reviews how the DIANA network of accelerators, test centers, innovators, and investors can advance production among both traditional and non-traditional defense suppliers. The Conclusion concludes with a summary of



this brief piece, noting the innovative approaches that DIANA will bring to the development of dual-use technologies in NATO.

Strategic Harmonization and Synergy

According to the OECD's (2017) Public Governance Review, "public procurement is increasingly recognised as a strategic instrument and policy lever for achieving government policy goals, such as innovation ..." (p. 16) [but] "must be deployed strategically in coordination with other policy areas" (OECD, 2017, p. 12). Innovation embedded in overarching strategy not only helps to coordinate between different levels of government but also contributes to "coherence and added value in the form of avoiding unnecessary duplication and using synergy effects" (OECD, 2017, p. 52). Furthermore, it sends a strong signal of political commitment that facilitates the process of implementing innovation at every level of administration and governance.

Allied Leaders agreed to launch DIANA in order

to foster transatlantic cooperation on critical technologies, promote interoperability among Allied forces and harness civilian innovation by engaging with academia and the private sector; ... [to] harness the opportunities presented by emerging and disruptive technologies, boosting NATO's competitive edge in collective defence and security; ... [and to develop] new capabilities [that] will improve the Alliance's ability to respond to conventional threats – and to the threats posed via these technologies themselves. (NATO, n.d.-a)

These goals have been enshrined in DIANA's Charter, which includes an

instruction to accelerate civil-military emerging and disruptive technological solutions—particularly dual-use ones—to critical transatlantic defence and security challenges, leveraging existing elements from NATO nations and NATO bodies and guided by relevant NATO Strategies and Frameworks to the effect that high-level objectives for DIANA are based on critical challenges facing operational end users from NATO nations and longer-term strategic priorities that fit within the NATO mission. (DIANA, 2022)

In the wider security context, DIANA can also contribute to enhancing the Alliance's industrial base and its capability to maintain its technological edge, delivering what is needed, when it is needed, without restrictions stemming from excessive external dependencies or bottlenecks. Recognizing that insufficient investments can lead to increased capability and industrial gaps and to greater strategic dependencies, DIANA offers an opportunity to facilitate coordination, pooling defense planning and co-operation in common strategic domains (related to emerging and disruptive technologies) by focusing nations' efforts and resources in the form of targeted investments that will amplify impact to develop and operate the full spectrum of capabilities, "avoiding duplication and increasing efficiency" (European Commission, 2024).

Achievement of such goals begins with the formation of DIANA's 'Strategic Direction.' The Strategic Direction defines strategic-level problem sets and innovation fields for exploration based on critical challenges facing operational end users as well as longer term priorities that fit within the Alliance's political-military objectives. Drawing on inputs from a wide community of operators, scientists and technologists across NATO and Allies, including insights gained from the NATO Industrial Advisory Group and the Conference of National Armaments Directors, and capability gaps identified through the NATO Defence Planning Process (NDPP). The NDPP "provide[s] a framework within which national and Alliance defence planning activities can be harmonised to enable Allies to provide the required forces and capabilities in the most effective way. ...[It] aims to... minimise duplication and maximise coherence across the various planning domains" (NATO, n.d.-b). Whereas NDPP documents identify priorities and focus areas both for NATO as a whole



and for individual Allies, the Strategic Direction specifies the scope of priorities to be met through DIANA. To that effect, the formation of the Strategic Direction takes into account additional factors such as alignment with defense industrial strategies, promotion of defense industrial cooperation, as well as enhancement of NATO-industry (NATO, n.d.-c). The NATO Science and Technology Strategy also influences the process, as it “enables the generation and exploitation of scientific knowledge and technological innovation as an essential support for the Alliance’s core tasks ... and inform[s] Allies’ investment decision priorities by facilitating the match-making between national and NATO demand” (NATO, 2018, p. 3). The formation of the Strategic Direction places DIANA in the wider context of holistically understood security where inter-reliant sectors (military and non-military) collaborate to deliver protection against both current and future threats of various natures. Through harmonization with this broad range of strategies and policies across the Alliance, DIANA offers a platform to facilitate coordination of planning domains. The intended effect is synergy with respect to the development and adoption of innovative solutions throughout NATO nations.

Capability Driven Dual-Use

DIANA’s Strategic Direction is operationalized through DIANA ‘Challenge Programmes.’ Each Challenge Programme outlines a critical problem statement that can be addressed through innovation fields prioritized in the Strategic Direction (DIANA, 2022). For example, DIANA’s ‘pilot year’ challenges sought solutions in the areas of energy resilience, secure information sharing, and sensing and surveillance. According to DIANA’s Charter, “Challenge Programmes are only conducted if there is strong potential for adoption across a number of Allies (or by NATO), if they support the dual-use intent, and if the solutions are likely to be commercially viable” (DIANA, 2022).

The first condition is achieved by ensuring that challenge formation is aligned to NATO’s capability needs identified by the two Strategic Commands (Allied Command Operations and Allied Command Transformation), as well as to national capability needs, that overlap with the Strategic Direction. In effect, DIANA will “focus on the most critical capability gaps and embed with the war fighter to do so” (Beck, 2024, p. 5). The capability-driven approach is intended to support harmonization of procurement and budgetary planning, discussed in the following sections. Furthermore, noting that “uncoordinated outreach, has sometimes resulted in overlapping, unprioritized, and competing demand signals that can make it hard for tech companies to engage, particularly small companies and startups” (Beck, 2024, p. 6), DIANA aims to leverage the potential of capability-oriented challenges as a clear demand signal that reduces risk for emerging technology start-up and scale-up companies, investors, and existing prime contractors as well as more fragile sub-tier suppliers. This can contribute to promoting focused investment into the capacity of the industrial base (DoD, 2023, p. 39).

The second and third conditions (dual-use application and commercial viability) help to address a broader spectrum of threats to security but also contribute to economic security within the Alliance and to building resilient supply chains. Recent developments in the security environment “have uncovered material gaps in the ability of ... [the] international [defense industrial base] to rapidly scale production[;] ... global supply chains are critical components of ... [the] defence industrial ecosystem, yet they are vulnerable, particularly in their sub-tiers” (DoD, 2023, pp. 20–21). “The overreliance on third countries’ supplies further undermines security of supply and freedom of action in case of crises” (European Commission, 2024, p. 5), as they may choose to prioritize their own demand over contractual obligations. On the other hand, “[d]eveloping secure alternative sources can involve years-long lead times to reach production scale” (DoD, 2023, pp. 20–21) and therefore requires anticipating action. “Nevertheless, supporting ramp-up also requires dealing with the industrial consequences of a ramp-down once the surge in demand has been met” (European Commission, 2024, p. 17).



DIANA has strong potential to address these issues. First, DIANA is uniquely positioned to pool demand for commercial innovation, complementing existing NATO structures that the conventional industrial base. Second, alongside developing complete systems where appropriate, DIANA will pursue opportunities for the integration of dual-use solutions that do not immediately form a ready-for-use technology into a larger system that may be provided by system integrators. To that end, DIANA will encourage the adoption of open architecture principles and use of, whenever possible, widely accepted industry standards in the design and development of platforms considering that “open architecture allows components to be modular and interchangeable, making it easier to integrate new technologies and updates across different systems” (DoD, 2023, pp. 30–40). This will increase the commercial viability of those solutions by connecting them to customers in the traditional defense sector and, by doing so, will enable utilization of small and medium enterprises’ production potential by incorporating into supply chains of critical capability suppliers. Third, leveraging the commercial aspect of emerging technologies with defense applications allows the Alliance to bolster industry’s resilience against cyclic demand and shifts in defense budgets which have traditionally hampered the ability of sub-tier suppliers to remain in the defense market. DIANA solution providers will be able to maintain their production lines to supply their civilian customer base while remaining available to defense and security applications. Thus, it is critical that DIANA solutions are developed on a true “dual-use” path for as long as possible. That is, these solutions will not be “forked” (splitting the “defense” and “civilian” versions) for as long as possible to avoid fragmenting their development cycles and their production lines. This lowers the costs of development and makes for a better product, where the base version is the sum of the best and most talented development team and process without regard to end use. This is accomplished in part by bringing a commercial perspective to the DIANA solution pipeline. Fourth, the holistic approach to security and understanding of interdependencies between different sectors (especially in regard to critical infrastructure) will allow focus on those dual-use technologies that are in demand in times of peace, crisis and conflict, using broad market fit to mitigate the risks of failure that befall early-stage and deep tech companies. Finally, maintaining the dual-use aspect of DIANA solutions will facilitate the scaling up of production, leading to reduced costs and increased availability, or as the EU describes, it contributes “to the building up of ‘ever-warm’ spare industrial capacities that allow for the necessary flexibility to ramp up in response to urgent spikes in demand” (European Commission, 2024, p. 17).

Each DIANA Challenge Programme features a competitive selection process—organised by DIANA—with bids submitted by innovators from across the Alliance. To avoid the hampering effect that prescriptive requirements inflict on innovation (OECD, 2017, p. 52), the functional approach is utilized by DIANA in pursuit of the best solution to the identified needs. The selected innovators enter a pipeline where DIANA leverages its affiliated ‘Accelerator Sites’ and ‘Test Centres’ to iteratively demonstrate each innovator’s proposed solutions to relevant end user operators across the Alliance to receive feedback and determine ‘product-market’ fit. Vetted innovators with the most promising solutions will be able to continue their work utilizing DIANA’s affiliated and constituent elements to make further progress with their proposed solutions to the specific challenges. Continuous dialogue with operational end users, capability developers, system integrators, industrial partners, and investors will ensure the technological solutions fostered within DIANA continue to address the identified problem sets for Allies and NATO, maintaining their commercial viability. Innovators’ journeys through DIANA’s pipeline will take place in successive stages, where discussion of all relevant aspects with the innovators will be ongoing and iterative. These discussions will include, but will not be limited to, technical aspects, economic aspects (prices, costs, revenues, etc.) and legal aspects (distribution and limitation of risks, guarantees, possible creation of special purpose vehicles, etc.). Both potential for adoption within the defense and security marketplace and overall commercial viability will serve as guiding



principles of the above-mentioned dialogue, with a possibility to discontinue any solution within the Challenge Programme at each stage.¹ Selected innovators are successful participants in the challenge pipeline and will be eligible to continue iteration, development, and production within the DIANA ecosystem through the Rapid Adoption Service without further competition.

Harmonised and Agile Procurement

DIANA's Rapid Adoption Service aims to be a quick, efficient and opt-in vehicle based on a single, agile set of rules that provide:

- support to innovators in the transition and delivery of interoperable solutions to relevant market(s), including navigating Allied and NATO procurement opportunities;
- agile contracting for emerging and disruptive solutions through multinational, multilateral, and bilateral programs that allow for the procurer's challenge and the innovator's solution to be continuously modified with performance-based milestones;
- agile contracting methodologies allowing Allies and/or NATO to leverage DIANA as a complement to their procurement system, pooling demand and simplifying processes where appropriate.

Operation of the Rapid Adoption Service will be supported by a dedicated digital platform collecting, processing, matching, and making available information on supply and demand to stakeholders as well as facilitating process management. The Rapid Adoption Service will allow operational end users to follow the development of dual-use solutions in the DIANA ecosystem to determine their interest in entering follow-on contracts with innovators and, depending on the case, with system integrators and investors as part of a consortium. The scope and the objective of the resulting legal arrangement will be determined on a case-by-case basis, but such arrangement will be based on a modular platform that does not require the typical lead times and complexities of one-off multilateral efforts.

The scope of agreements provided as a part of the Rapid Adoption Service will include but not be limited to:

- **Research and Development Agreement** – concluded to identify technical and performance characteristics of a new product that will satisfy the capability needs of an end user, to confirm the achievement of the level of technological readiness and to develop solutions further, as deemed necessary by participating nations, including development of a *prototype* showing the application of a new concept or new technology in real life or representative environments.
- **Research and Development Agreement with Optional Procurement** – applicable to cases whereupon positive verification of the prototype the participants to the agreement will agree on transition to a *manufacturing subphase*, cooperating on testing, verification and certification as needed to begin delivery of the final product to the end user.
- **Procurement Contract** – used for the acquisition, licensing, purchase, or employment of a complete product and its adaptation to specific technical requirements of an end user (if needed).

In executing its adoption function, DIANA will closely cooperate with other NATO bodies such as the NATO Support and Procurement Agency and the NATO Communications and Information Agency to leverage existing resources and expertise. This structure will enable the Rapid

¹ See: European Commission (n.d.).



Adoption Service to provide all necessary procedural support and act as a broker and/or agent on behalf of those Allies that have limitations in their ability to contract with 'foreign' (Allied) innovators.

The development of the single set of rules supporting the Rapid Adoption Service is guided by the principle that “the harmonization of laws aims to transform the public procurement system into more strategic system in which promotion of innovation plays a central role” (Gomes, 2024, p. 204). DIANA notes that despite substantial efforts to enhance common rules governing European innovation procurement, “harmonisation of national laws (still) faces considerable difficulties where it clashes with administrative law traditions” (Gomes, 2024, p. 105), as different nations may understand and implement common principles differently. Furthermore, as the OECD observed, government “agencies responsible for public procurement are often not co-coordinated with agencies and ministries in charge of innovation policies” (OECD, 2017, p. 17), while to “promote innovation, contracting authorities need discretion and flexibility in both the procedural and the contract execution phases” (Gomes, 2024, p. 201). To address these difficulties, DIANA will leverage available expertise by engaging with experts and seeking continued input from national authorities and international organizations to fully understand the specifics of their legal and procurement system. DIANA aims to connect and complement existing systems, with a new harmonized and coordinated instrument covering all essential stages of innovation procurement to amplify best practices developed by DIANA and national innovation entities across the Alliance’s innovation ecosystems and facilitate their equal implementation through the single, agile set of rules, contracting methodologies and supportive management processes which will enable quick and agile procurement.

The potential of the Rapid Adoption Service should also be considered in the context of strengthening the defense industrial base due to consolidation of demand and supply through multinational, multilateral and bilateral programs enabling collaborative procurement. As discussed in previous sections,

demand is still largely organised along national lines, with most investment decisions arising from domestic considerations, and based on national programming, often failing to factor in broader strategic and efficiency considerations. As a result, ... the supply side remains also essentially organised along national lines... This results in a scattered [defense technological and industrial base], ... [and in] duplications and foregone opportunities. (European Commission, 2024, p. 5)

In response to this issue, the Rapid Adoption Service will offer a “networked cooperative framework” for Allies that enhances defense industrial output, seeks to de-risk supply chains and improve resilience by growing multiple “production lines across a consortium of like-minded nations” (DoD, 2023, pp. 22, 23). Correspondingly, the alignment with strategies and policies, and the capability drive for co-development with operational end users is designed to create conditions leading to collective demand that can be channelled and subsequently fulfilled through multinational programs that create critical mass. This aims to incentivize the supply side to cooperate and seize economies of scale, allowing quicker production and procurement, at lower cost, boosting defense production, innovation, and overall capability.

Leveraging the multinational/multilateral formula combined with DIANA’s current network of over 180 Test Centres and access to NATO’s resources of operational experimentation and testing, the Rapid Adoption Service will additionally help to avoid the rigidity of typical linear procurement, combining the aforementioned with the potential of business development opportunities provided by over 20 Accelerator Sites and strengthening emphasis on interoperability, interchangeability and standardization, as explained in the next section.



Standardization, Interchangeability and Interoperability

Standardization contributes to interoperability of Allied forces as well as to reinforcement of the respective industrial bases and increase in overall production capacity. Unfortunately,

[d]espite the Standardisation Agreements (STANAGs) adopted in the framework of NATO, the voluntary uptake of these standards remains an issue. ... [C]urrently agreed standards often do not sufficiently deliver the requisite real interoperability and interchangeability in operational terms since they do not cover all defence systems, nor are they systematically detailed enough. ... [C]ertification also remains an issue ... which de facto fragments the market and hampers logistics. (European Commission, 2024, pp. 10–11)

DIANA's focus on new (innovative) dual-use solutions developed through the international formula (presented above) in engagement with end users, system integrators, and investors offers an opportunity to facilitate the process of standardization avoiding, at the same time, the risk of hampering innovation that may be caused by setting up requirements and standards too early in the process. To that end, DIANA will follow the OECD's recommendations for using a functional approach at the beginning of DIANA's Challenge Programmes (OECD, 2017, p. 52) and then allowing the "procurer's challenge and the innovator's solution to be continuously 'tweaked' with performance-based milestones" (DIANA, 2022). Co-development, alongside operational end users and agile capability developers from the early stages will enable assessment of the technology in an operational environment leading to alignment of product development with end-user needs and industrial roadmaps. Furthermore, it will provide an opportunity to reach an agreement on applicable standards, or on the development of new standards, as well as on mutual recognition of certification, accreditation, and test results, which can be facilitated through enhanced cooperation within DIANA's network of Test Centres acting as a central node for engagement between innovators and operational end users.

In this process, DIANA will leverage its dual-use focus and utilize "widely accepted industrial standards" rather than operate in isolation or invent new, narrowly applicable standards, which "will facilitate and simplify integration and production efforts" (DoD, 2023, p. 35). This is because "increasing standardization allows for economies of scale and streamlined production processes, and greater interoperability"; and can ... help "small businesses and non-traditional suppliers work with [defence]"; further, [t]hey reduce barriers to entry by simplifying product development and integration, making it functionally easier and less expensive for these suppliers to participate and compete, and focus on niche areas of expertise and contributing innovations to the broader defence ecosystem" (DoD, 2023, pp. 35, 36).

Protected

"Ensuring sufficient access to finance for ... the defence sector is vital given the compelling need to boost investment in this ecosystem," and given "[small and medium enterprises] operating within the defence sector face higher barriers to accessing finance compared to companies active in other sectors" (European Commission, 2024, p. 24). It has been noted that "limited funding or financial related problems appeared to be the main cause driving startups down the Valley of Death curve" (Gbadegeshin et al., 2022, p. 4). In absence of sufficient funding, small cutting-edge companies "are too often bought up by larger overseas companies before they can develop into the medium sized enterprises" (House of Commons: Science and Technology Committee, 2013, p. 3). This creates opportunities for "adversarial nations that are strategically employing investments in key U.S. and allied defence industries to harvest critical technologies, gain access to pioneering innovation and research and development efforts, ... and capitalize on dual-use technologies that may be used to close the gap in... [NATO's] comparative advantage." Failure to "protect ... critical industries and assets from adversarial influence ... could lead to strained



diplomatic relations, decreased trust, loss of foreign defence sales to competitors (perhaps including adversaries), and possibly even weakened economic ties, rendering deterrence of aggressive behaviour by adversarial nations more difficult” (DoD, 2023, p. 49).

In response to the above problem, technologies critical for NATO defense and security challenges in the DIANA ecosystem are incubated in a transatlantic network running an accelerator program which makes innovators cognisant of the particularities of the defense and security sector and of best practices to protect their technologies from nefarious actors. This effort is complemented by the ‘Allied Capital Community,’ a pooling of capital resources which helps deny nefarious actors free rein in targeting and transferring critical technologies. It aims to achieve this through setting a common and consistent baseline, delivered through a digital platform where Allies can share and exchange the results of vetting procedures on capital investors (capital supply) and relevant innovators (capital demand), including those related to ownership and control. Through collaboration, Allies and the private sector can benefit from increased transparency in this area and, at national discretion, potentially avoid the duplication of vetting efforts. Acknowledging that “private investment increases as companies move from concept to prototype to product” (Defense Innovation Board, 2023, p. 4), the Rapid Adoption Service will allow investors, associated with the Allied Capital Community, to follow technological developments of DIANA’s solutions and to participate in dialogues between innovators and end users. Recognizing that “[f]inancial actors’ willingness to engage with the defence industry appears to be affected by specificities of the defence market (including complexity of procurement)” (European Commission, 2024, p. 25), the availability of streamlined and consistent procurement processes described above are designed as the economic incentive for investors to financially engage in the development of cutting-edge technologies, with commercial viability and security applications, that require capital support. This contributes to the economic security and technological edge of the Alliance.

New Production Capacities

Reaching out to non-traditional defense suppliers lies at the core of DIANA’s mission, so significant effort must be made to “build and deepen relationships with commercial industries not traditionally involved in defence work” (DoD, 2023, p. 20). For example, in the United States, “federal contracting to small businesses owned by underrepresented socio-economic groups accounts for less than 10% of all federal contracting dollars. These suppliers come from diverse industries and can bring technological, production, and process advancements to the defence sector” (DoD, 2023, pp. 19–20), broadening the industrial base and fostering competition within the market. Unfortunately, “high barriers to entry disincentivize the types of small or sub-tier suppliers that help to diversify and make the industrial base more resilient” (DoD, 2023, p. 20). Eliminating unnecessary bureaucracy and encouraging industrial cooperation would help make possible the quick delivery of critical defense components from each nation’s respective industrial bases and has therefore been advocated as a measure to improve security of supply both for the United States (DoD, 2023, pp. 21–22) and the European Union (European Commission, 2024). The Rapid Adoption Service, with its agile contracting methodologies and tools for navigating procurement activities, to contribute to that endeavor while the holistic approach to security reflected in the dual-use emphasis of DIANA will support the integration of innovative solutions into multiple and diverse supply chains, including that of Allied system integrators. Recognizing the importance of leveraging private market resources and knowledge and enabling communication in a collaborative manner, as well as promoting cross sector discussions (Kuchina-Musina & McMartin, 2024, p. 70), DIANA has designed its accelerator program to equip businesses with the skills and knowledge to navigate the world of deep tech, dual-use innovation and the defense marketplace through a combination of lectures, workshops, and mentorship that



will help participants to build their companies into viable dual-use ventures shaping a peaceful future for the Alliance (DIANA, n.d.-b).

Conclusion

1. DIANA is a new NATO body established to help the Alliance build and keep its strategic advantage in the field of emerging and disruptive technologies.
2. By harmonization with the broad range of strategies and policies that inform strategic planning, DIANA can leverage coordination of planning domains contributing to synergies and effectiveness of innovation efforts within the Alliance.
3. Thanks to its capability-driven dual-use approach, DIANA will foster technological solutions to address military needs of operational end users, maintaining their commercial viability with a view to increasing overall industrial production capacity.
4. DIANA's Rapid Adoption Service, based on a single set of rules, will allow for quick and agile international collaborative procurement utilizing collective demand signals to achieve effects of scale and incentivize investment on the supply side.
5. DIANA's focus on innovative dual-use solutions developed in the international forum in collaboration with end users, system integrators and investors will offer an opportunity to facilitate the process of standardization, foster interoperability and strengthen cooperation within the Alliance's industrial base.
6. DIANA provides a mechanism designed to support start-ups through all stages of development; protecting them against adversarial and/or existential financial, security, and compliance risks; and enabling them to build their solutions into viable dual-use ventures.
7. Strengthening communication and engagement with industry will support NATO in accessing the potential of start-ups and small and medium enterprises to grow resilient supply chains of critical components and technologies across the Alliance.

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