



NATO BIOTECHNOLOGY CONFERENCE

“Prepare, Foster, Protect”

Community Building Session’s Theme 2:

***Bridging the Gap between Bio-innovation and Military
Adoption – The Adoption Challenge***

Overview of session objectives:

The adoption of new technological products and services at the speed of relevance, including present and future bio-innovation and bio-manufacturing processes leveraging other relevant Emerging and Disruptive Technologies (EDT), with dual-use or solely military applications, is critical to maintain the Alliance’s technological edge, which is an essential enabler of our military dominance and the viability of our deterrence and defence posture.

Already today, new biotechnology products and processes can help to address critical capability shortfalls, improve interoperability and enhance the effectiveness of existing and future platforms. These new technological products are increasingly being developed by non- traditional suppliers, with new approaches to product development, such as technology-focused companies, medium sized enterprises and start-ups such as those the Alliance supports through its Defence Innovation Accelerator for the North Atlantic (DIANA) and the NATO Innovation Fund (NIF). However, more must be done to bring these cutting-edge technologies into the hands of Allied operators to strengthen the Alliance’s deterrence and defence posture. The speed at which new technological products are being developed outpaces the Alliance’s ability to procure and integrate them, and evolve the relevant doctrine. At the same time, the Alliance’s technological edge is narrowing as our strategic competitors and potential adversaries rival the Alliance’s ability to adopt EDT solutions into our militaries.

Endorsed by Allied Heads of State and Government on 25 June 2025, [NATO's Rapid Adoption Action Plan \(RAAP\)](#), including its political commitment and pilots, aims to significantly accelerate the pace at which the Alliance adopts new technological products, in general to within a maximum of 24 months. It provides Allies with shared objectives and best practices, underpinned by NATO support, to:

1. **Accelerate procurement and integration**
2. **De-risk new technological products**
3. **Ensure that new technological products are better tailored to Allied military needs**

In light of the provision of this action plan, the session will explore the commonalities and specifics of adoption pathways for biotechnology solutions in military applications and attempt at identifying practical ways to better connect biotech innovation eco-systems with military end-users.

Framing the context:

1. **Adoption of key technologies is crucial:** to bring cutting-edge technologies into the hands of Allied operators, to maintain and reinforce the Alliance's defence posture (Art5 + Art3).
2. **Historical perspective:** Biotechnology is dual use in its essence: integration of biotechnologies into the armed forces has been paramount for decades, even before EDTs and modern/hybrid conflicts. Examples include vaccine stocks, exoskeletons, biosensors, biomanufacturing (Goodyear x US DOD), wound healing, human enhancement. Biotechnologies can contribute to both protect and support the armed forces in their endeavours.
3. **To adopt faster**, to bridge the gap, Allies must be reassured that:
 - a. Technologies **meet their needs**, both from operational and logistical aspects.
 - b. Technologies have undergone **extensive de-risking**
4. **Existing resources and avenues for strengthening adoption processes:**
 - a. Capturing the needs: of today (ops & logistics) and of tomorrow (based on intelligence and technology watch (the "unknown unknowns" represent one of the most significant and unpredictable threats in defence biotechnology)).
 - b. TEVVs and test centres: currently circa 190 NATO DIANA test centres are available for innovators to perform testing. These centres could be mutualised; in this scenario military personnel would perform test, validation and verification activities. **The more de-risking, the faster integration, the better economical return.** Caveat: Should all de-risking activities rely on civilian centres (considering the safety and security issues)?
 - c. Benchmarking based on initiatives within the allied nations.

Few triggering questions:

- What are the specificities of adopting biotech vs other EDT technologies?
- What is the nature of the gap towards adoption as far as bio-innovations and biotechs are concerned? (And which biotechs?)
- Can we duplicate adoption of technologies in general to biotech? Can we generalise?
- Which biotechs have an adoption potential, now?