National Defence Research Roundtable: Notes and Proceedings

Higher Education Strategy Associates & Invest Ottawa

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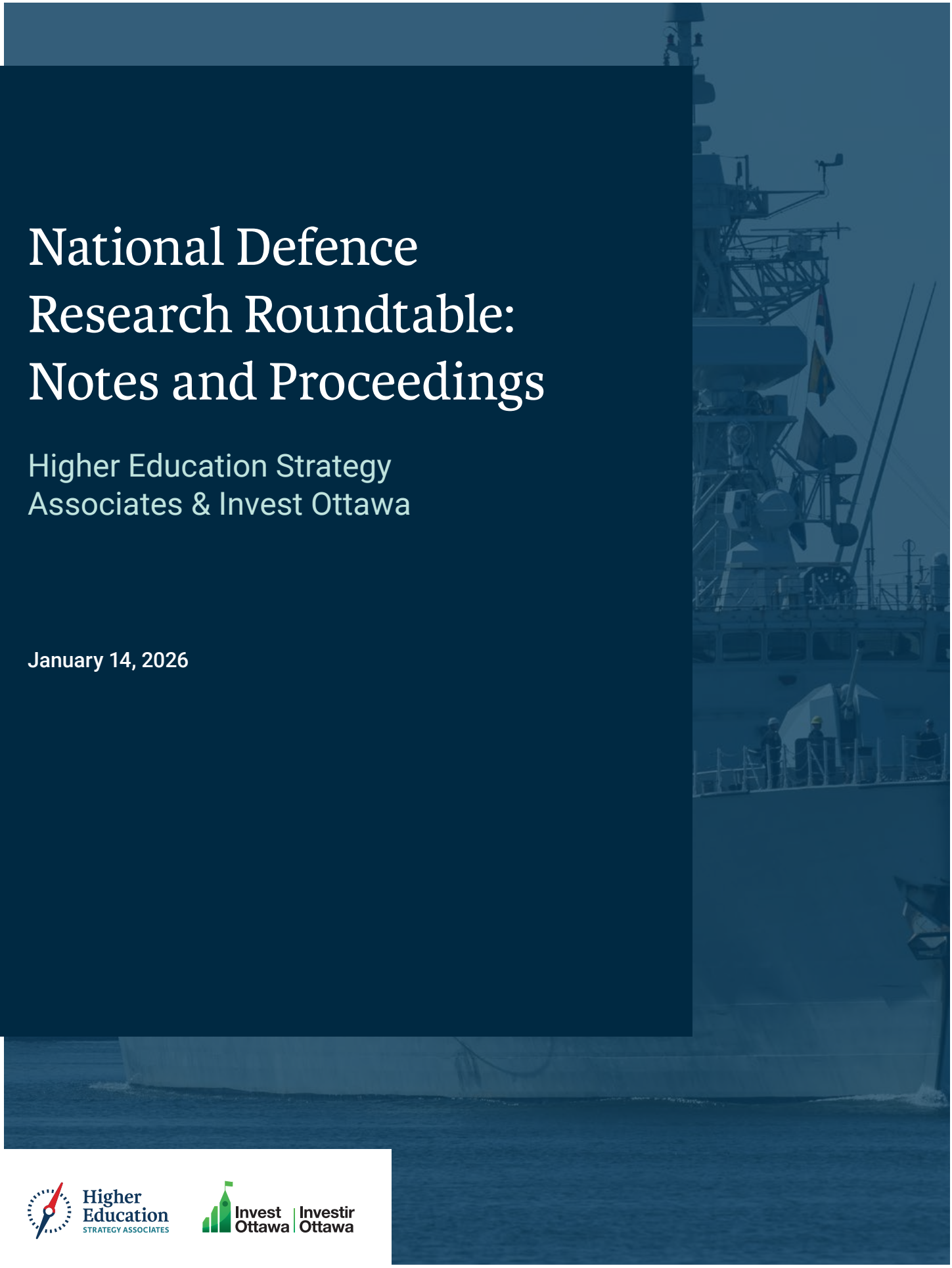

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National Defence Research Roundtable: Notes and Proceedings

Executive Summary

On December 15, 2025, the National Defence Research Roundtable convened 77 leaders from 22 universities, 6 colleges and polytechnics, 4 national and international research centers, 4 national organizations and advocacy groups, and representatives from funding bodies and government for a one-day meeting in Ottawa.

The National Defence Research Roundtable came together to begin a national conversation about:

- How to coordinate and advance defence research in Canada, and,
- To develop sector-wide advice on how Canada should structure future defence and security research investments.

Through thematic discussions, presentations from experts in key thematic areas of national defence and security, and collaborative policy design sessions, roundtable participants outlined the structures, investments, and enabling conditions needed to build a coordinated and nationally aligned national defence and security research ecosystem.

The following report summarizes these discussions and outlines the recommendations to government and post-secondary institutions emerging from this meeting.

What We Heard: The Big Picture

- Canada already possesses significant post-secondary research capacity in strategic priority areas, but post-secondary institutions currently have limited ability to scale up defence research.
- Defence research requires speed and agility, mission-orientation, integration across disciplines and institutions, coordination between government, industry, and post-secondary institutions.
- The current research ecosystem is fragmented, resource constrained, and disconnected from operational needs.

The future of Canada's defence and security capabilities will be shaped by Canadian research and innovation. The post-secondary sector must take bold and transformative action to coordinate and supercharge the research ecosystem now – but achieving this will require sustained support from government.

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Research and Defence: How We Drive Canada's National Defence and Security Strategy Forward

In 2025, the Government of Canada committed to significant new defence spending, including funding commitments for national defence and security related research in Budget 2025. However, the principles, priorities, and mechanisms that will guide how this funding is spent over the coming years have not yet been made clear to the post-secondary sector.

In the face of this uncertainty, the National Defence Research Roundtable was held in Ottawa on December 15, 2025. The Roundtable convened 77 leaders from 22 universities, 6 colleges and polytechnics, 4 national and international research centers, 4 national organizations and advocacy groups, and representatives from funding bodies and government for a one-day meeting.

This meeting emerged from a series of initial conversations concerning how universities can lean into national projects – including national defence – at the *Universities Vice-Presidents Network* meeting in Victoria in November 2025. The consensus at this meeting of university vice-presidents was that while some national organizations were already working with government and defence sector stakeholders to build relationships with universities, there was a substantial need to bring together a broad cross-section of expertise to think together about the post-secondary sector's collection contributions to national defence and security research.

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The sector recognizes the urgency and seriousness of this moment for Canada. What is clear is that the future of Canada's defence and security capabilities will be shaped by Canadian research and innovation. That is why the post-secondary sector must take bold and transformative action to coordinate and supercharge the research ecosystem now – but achieving this will require sustained support from government.

The following report summarizes these discussions and outlines the recommendations to government and post-secondary institutions emerging from this meeting.

What The Post-Secondary Sector Brings to National Defence and Security

Canada's post-secondary institutions will be critical to the success of Canada's national defence and security strategies. It is clear that realizing Canada's national defence objectives will require a complete economic and human-capital transformation. Presently, Canada is lacking the skilled workforce and training pipeline to build ships and submarines, to upgrade transportation infra-

structure, to monitor and protect the arctic, and to continue driving advances in artificial intelligence and quantum computing.

The future workforce of Canada's defence sector will be educated in Canada's post-secondary institutions over the coming decade. What those students learn will be inextricable from the research that is happening on our campuses and the breakthroughs that Canadian researchers will make. Across the country, faculty, students, and research staff are already at the forefront of discoveries and innovations that will impact how Canada defends itself – and institutions recognize that they need to do more of this critical defence research to realize Canada's defence and security objectives.

- Universities are Canada's greatest strategic reserve of intellectual and technical capacity – but this reserve is currently underutilized and under-resourced.
- Canada's colleges and polytechnics are well positioned to conduct practical and applied research and to provide defence and security-related education – to military and civilian populations alike – and will be key to realizing Canada's national defence and security goals.
- Canadian academics and institutions are at the cutting edge and bring foresight on emerging critical technologies like quantum and artificial intelligence.
- Post-secondary institutions have established, long-term relationships with communities across the country, positioning them to uniquely facilitate relationship building between communities and defence partners.

Canada possesses significant post-secondary research capacity, and our researchers are already conducting world-class research in strategic priority areas like:

- Arctic security, resilience, and defence
- Artificial intelligence
- Cybersecurity and fintech
- Quantum computing
- Nuclear and dual-use energy technologies
- Maritime systems, remoting sensing, and underwater technologies
- Autonomous systems, robotics, and drones
- Biosensors, toxin detection, and environmental monitoring

Our existing defence research capacity includes: research labs and facilities; equipment; field sites and stations; infrastructure; world-leading research centers; cutting edge applied and basic research; world-class talent; long-standing relationships and partnerships with Indigenous communities; and workforce development programs embedded in research projects.

From coast to coast to coast, our universities, colleges, and polytechnics understand the urgency of this moment and are ready and willing to drive Canada's defence capabilities forward. To do this, institutions need to work with government and industry – and each other – to create the enabling conditions for Canadian defence research to grow and thrive.

Canada has more defence and security research capacity than it realizes, but it is fragmented and unmapped between institutions, lacking shared strategic direction and coordination, and under-resourced.

What We Heard from Thematic Group Discussions

Over the course of the meeting, participants engaged in thematic group discussions organized around four strategic policy domains within national defence and security: energy, artificial intelligence, oceans, and the arctic. Below are some of the key takeaways from each group.

ENERGY:

- Canada's existing leadership in nuclear energy and other kinds of nuclear research can and should be leveraged in advancing the research ecosystem.
- Small modular reactors, mineral extraction, and dual-use research should be high priority.
- Canada needs to focus on making communities energy self-sufficient and building a more resilient, "sovereign" grid.
- Meeting the long-term energy production needs of artificial intelligence and other emerging technologies should be a priority research area.

ARTIFICIAL INTELLIGENCE:

- Institutions need more funding to support overhead for AI research.
- Defence-related AI needs not being clearly articulated by industry and military stakeholders.
- Incentivizing and commercializing dual-use areas of AI research has been difficult to date – new strategies are needed.
- Canadian AI is world leading in fintech – Canada should be investing in transferring cybersecurity expertise from this sector to other security-related fields.

OCEANS:

- Submarine and naval build commitments have created major workforce training needs in engineering, robotics, welding automation, sensors, marine biology, cybersecurity, and artificial intelligence.
- There is a need to expand beyond naval and submarine building and capabilities – marine and biological threats are blind spots in current security thinking.
- Priority areas for future research should include maritime and underwater systems, remote sensing, and biological, chemical, and environmental sensors.

ARCTIC:

- Indigenous collaboration and co-development are mission critical and collaboration must be deep, long-term, reparative, and meaningfully involve reconciliation.
- Healthy and strong communities in the North are important precursors to a secure Arctic – often overlooked in defence research and strategy.
- Communication capabilities in northern regions and the Arctic need building up to support defence capabilities and northern post-secondary institutions have strengths and solutions that can be leveraged here.
- Researchers need a coordinated approach to meta-data standards and coordinated data reporting.

Challenges the Post-Secondary Sector Needs to Solve

Structural and Cultural Challenges in Post-Secondary

Participants identified six structural and cultural factors constraining their ability to scale up defence research:

- Defence research projects, infrastructure, facilities, and equipment exist across institutions (and sectors) but are unevenly connected and insufficiently aligned with national objectives. Canada lacks a comprehensive, national-level asset mapping of research capacity, infrastructure, technology, partnerships, and critical services. Without this baseline, institutions struggle to define strategic priorities, assess risk, or make informed investment decisions.
- Canadian post-secondary institutions have historically been oriented towards inter-institutional competition rather than cooperation. Institutions largely lack the organizational infrastructure to support inter-institutional collaboration and the sharing facilities and equipment – with other institutions, and with industry and military partners.
- Defence is not widely understood or embraced as a public good in the post-secondary ecosystem, and Canadian institutions have historically not been military and defence friendly. As a result, institutional leaders, and many researchers, have skills gaps with respect to talking about defence research and pitching to the defence industry.
- There is currently weak integration between the post-secondary ecosystem and the Canadian Armed Forces. CAF expertise is largely absent from campuses and civilian research. Likewise, civilian researchers are largely disconnected from the CAF, preventing exchange of knowledge and collaboration.
- Post-secondary institutions in Canada are experiencing a period of financial precarity and constrained resources. The proposition of hosting research with significant overhead costs and upgrading facilities and infrastructure to support increased defence research is therefore a significant challenge for many institutions.
- While standards and guidelines for evaluating research for the purposes of tenure and promotion and grants vary between institutions, they are largely not designed to appropriately evaluate and recognize classified research. This disincentivizes faculty from pursuing such projects.

Addressing these challenges will require institutions to work collaboratively to map assets; share resources, facilities, and services; and foster culture change. This level of inter-institutional collaboration will require significant coordination efforts.

Coordination – rather than the creation of entirely new capabilities – is our most urgent need.

Barriers in the Funding Ecosystem

The existing research funding ecosystem creates structural barriers to delivering on Canada's defence and security priorities. Participants identified five key issues in the existing ecosystem – both with respect to funding mechanisms and the overall governance structure of the system – that are impeding institutions from scaling up national defence and security research.

- Building durable defence capacity requires stable, long-term investment. The current tri-council model is reliant on short-term project-based funding that is at odds with this need.
- The existing funding landscape is fragmented and confusing, with too many small, disconnected programs diluting impact across too many uncoordinated entry points to the system (Tri-Council, DRDC, DND, IDEaS, NRC, DISH, etc.). The absence of a clear "front door" for post-secondary institutions to access the funding system creates inefficiency, duplication, and missed opportunities for collaboration. The lack of coordination across the system limits researchers, institutions, and government in their abilities to act strategically.
- The Tri-Council's non-classified and discipline-based structure is not designed to fund mission-driven defence research. Changing this will either require a major reorientation of the Tri-Council's mandates, or the creation of a parallel structure for funding this kind of research.
- The ecosystem is not aligned with the realities of classified research. Classified environments and short-term funding limit long-range planning and cross-institutional cooperation and collaboration. Coordination between classified and non-classified funding streams would be necessary to support research pipelines and talent development.
- Existing funding models risk concentrating resources among a small number of institutions, limiting the participation of institutions outside of the U15. There is a clear need for funding mechanisms that support regional distribution, inclusion of small and applied institutions, and partnership-based models that enable institutions to contribute based on strengths.

Reforming the governance structure and funding mechanisms that make up the Canadian research ecosystem is therefore mission critical to Canada's defence research capabilities. Reform of the funding system and its governance are inseparable issues: without coordinated governance, funding will continue to fragment, and without stable long-term funding, governance reform will lack credibility.

Communication with Government

Post-secondary institutions of all sizes and orientations – from colleges to comprehensive universities to the U15 – want to contribute to Canada's national defence and security and accept that to do so will require significant structural change and investment. However, institutional leaders feel largely left in the dark with respect to the government's defence strategy and the role institutions will play. A lack of communication – and, indeed, consultation – from government has left institutions confused about strategies, timelines, and objectives around which they can coordinate their efforts.

At the strategic level, this communication gap is preventing post-secondary institutions from working with government as partners in realizing Canada's national defence and security objectives. At the operational level, the lack of communication leaves institutions waiting for direction and guidance that they can turn into action.

- Institutional leaders recognize that expanding defence research will require significant infrastructure, operational, and policy changes to meet security standards, along with

increased security screenings for faculty and operations staff. While willing to undertake this work, leaders note that the required culture shift, time, resources, and capital investment are substantial—and they currently lack clear guidance to proceed.

- Institutional leaders are also aware of new federal initiatives such as the Defence Innovation Secure Hub (DISH), but report limited consultation or communication about the purpose and structure of such initiatives. This perceived unilateral approach creates uncertainty, leaving institutions hesitant to invest further in readiness work without clearer, actionable direction from government.

There is a clear need for communication – and consultation – between government and post-secondary institutions. The absence of information sharing is actively delaying institutions from moving forward with readiness work.

Learning from International Models

The roundtable agenda included a *presentation on international models* for organizing and funding national defence and security research. This presentation provided a high-level overview of funding models used in France, the United Kingdom, the United States, Australia, and Sweden. In discussions, participants identified components of international models that were best suited to the Canadian context, namely Sweden's Campus Total Defence model and the Australian Defence Science and Universities Network.

The Swedish model is rooted in an expansive whole-of-society definition of defence that encompasses civil preparedness and emergency response in addition to military capabilities. Participants felt this was an apt culture fit for Canada and would align well with the needed culture shift in post-secondary towards a whole-of-society readiness framing of defence and security. This model is also rooted in a coordinated network of 30+ Swedish universities (civilian and military) oriented around providing upskilling education for the total defence mandate and developing specialized research hubs reflecting each member university's areas of strength. This coordination has largely been bottom-up and organized by universities themselves, which resonated with post-secondary leaders and representatives from funding bodies. Participants felt that the Canadian post-secondary sector could self-organize and coordinate in similar ways, enabling them to proactively develop strategies and solutions in response to governmental priorities rather than awaiting top-down instruction.

The Australian Defence Science and Universities Network is a hub-and-spoke model in which the defence research ecosystem – including collaboration, funding, and relationships between government, institutions, and industry – is coordinated through independent state or regional-level agencies. These agencies receive federal support and may advise the federal government but are independent bodies. Participants felt that a hub-and-spoke model for coordination and funding would decenter Ottawa and place more emphasis on provincial/territorial and/or regional bodies that would be more responsive to regional and local contexts and needs. Participants also articulated that a networked approach could better coordinate and leverage existing infrastructure, capital, and funding systems across the country – addressing the fragmentation in the existing system – and would effectively create a "front door" to the post-secondary research ecosystem for external stakeholders.

How We Move Forward: Our Recommendations

What Post-Secondary Institutions Can Do

1. **Address cultural barriers to defence and dual-use research:** Facilitate cross-campus dialogue that socializes and reframes defence research as an exercise in collective security, civil readiness, and resiliency. Continue to protect the academic freedom of faculty and students not to engage in defence research while simultaneously creating the conditions to empower those who do wish to undertake this work.
2. **Build university-defence trust:** Work to build mutual, accountable, and trust-based relationships with DND and the CAF through creating opportunities for integrated research and knowledge exchange with military personnel, creating clearer pathways for students to pursue careers in defence, and making strides towards being military-friendly institutions.
3. **Address structures that disincentivize classified research:** Develop frameworks for the evaluation of classified research for the purposes of tenure and promotion, graduate and postdoctoral admissions, and internal grant applications, so that researchers are fairly recognized, evaluated, and rewarded for this work.
4. **Conduct asset mapping:** Engage in institution-wide asset mapping exercises to identify existing expertise, equipment, facilities, and scientific infrastructure to inform strategic decision-making.
5. **Foster inter-institutional collaboration:** Create policies, procedures, and formalized relationships between key offices that enable and encourage inter-institution research teams, and the sharing of resources, expertise, equipment and facilities.
6. **Build relationships with industry partners:** Be proactive and strategic in connecting research offices with defence industry stakeholders, promoting our defence research capabilities directly to industry, and developing partnerships with industry.

What Government Can Do

1. **Communicate and Consult:** Clearly communicate defence strategy, priorities, procedures and standards to all post-secondary institutions, and consult with the sector as a partner in the design of new research-related programs and initiatives.
2. **Drive mission-oriented research:** Set defined national challenges and clear strategic priorities for mission-driven research around which institutions and researchers can organize their efforts.
3. **Develop a scientific infrastructure strategy:** Conduct a national asset mapping exercise of existing scientific facilities and infrastructure to inform to development of a national strategy for upgrading scientific infrastructure. This strategy should be accompanied by a separate funding stream for building and renewing scientific infrastructure.
4. **Harmonize security standards:** Work with provinces/territories to harmonize, clarify and simplify federal and provincial security standards.
5. **Reduce fragmentation:** Align a whole-of-government approach to defence with a clear, single point of entry or “front door” for institutional and industry stakeholders to engage in defence research.
6. **Create a defence research funding and coordination agency:** Create a peer or umbrella agency to sit alongside, but not replace, the Tri-Council, DRDC, and Defence Investment Agency. This agency would operate in both classified and non-classified spaces, coordinate long-term research priorities, and fund projects on a long-term basis rather than short-term cycles.

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