



**Joint Arctic Capabilities for the Defence of Canada:
A Multi-Domain Approach to Affirm Our Northern Sovereignty**

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Exercise Solo Flight

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JOINT ARCTIC CAPABILITIES FOR THE DEFENCE OF CANADA: A MULTI-DOMAIN APPROACH TO AFFIRM OUR NORTHERN SOVEREIGNTY

INTRODUCTION

The illegal invasion of Ukraine by Russia, the Houthis' armed presence in the Aden Gulf, the Chinese threat on Taiwan and the continued aggressive rhetoric from North Korea towards the US and its allies, as well as climate change, all are important contributors to a renewed sense of great power competition globally. Despite being different global events that require various levels of international intervention, one common theme is the increasing importance of northern territories and its geo-politic relevance on global economy. From a mineral and energetic resource point of view, strategic maritime transportation, and military perspective, the Arctic regions will be a significant enabler to achieve any objectives these competing powers have on their agendas. With North America having the benefits of its unique bi-national organization in charge of the continental defense, NORAD, it will continue to be a cornerstone in the defense and sovereignty of the Canadian Arctic.

The physical environment of the North is obviously very difficult and austere, with harsh climate and scarcity of population which makes it extremely complex to operate in. Despite being an Arctic country, the capabilities of the Canadian Government and the Canadian industry have rapidly been overmatched by other nations such as Russia and China, leading to a significant strategic and operational gap in our defence. Combined with an increasingly interdependent technological industry and significant pressure on manufacturing and shipping cost, our obsolete arctic capabilities have become very concerning liabilities for NORAD and for the Canadians in our first line of defense to the North. Canada is now known by our U.S. allies to be trusted but unreliable, our superficial commitment towards the defence of the Arctic is yet another good example of this sentiment. An iterative and collaborative approach to develop a credible and persistent strategy of the North in partnership with Indigenous communities and the industrial sectors, is of paramount importance. This paper will demonstrate the Joint Capabilities required to strongly affirm our Canadian sovereignty in the Northern regions and highlight the necessity to adopt a multi-domain approach, which includes not only the military, but also the industrial sector as well as the Indigenous communities to be effective, credible, and durable over time.

We will start by defining the specific threats to the Canadian Arctic to better understand the requirements to achieve Northern region sovereignty. We will then identify the capabilities under three different domains, the military, industrial and monitoring capabilities. Finally, a proposed way forward in the governance of this multi-domain approach will conclude this paper.

THREATS TO CANADIAN ARCTIC

The Foreign Affairs Minister's intent is clear, Canada's "vigorous assertion of our sovereignty, particularly in the Canadian Arctic, is a fundamental priority".¹ The current World Order is being challenged daily and there are many direct threats to the Canadian North, notably from Russia and China. The current socio-demographic data from Canadians is unequivocal, the perception of a more dangerous world today is at an all-time high at 78% and Arctic security is a deep concern for Canadians.² The latest Defence Policy Update highlights the Russian and Chinese Arctic capabilities and their interests for the North's natural resources such as minerals used for technology and defence purposes (Rare-earth metals, Uranium, Gold, Neodymium). It has never been more important for Canadians and the Canadian Government to take actions and strongly position us in the region. Russia maintains a wide portfolio of military capabilities that operate in the Arctic, which makes it the greatest competitor to our sovereignty. However, military capabilities in this harsh climate are not the only issue. Russia, along with China, also have an overwhelming presence in the region with exploration and research vessels, collecting data and conducting surveillance on our territories with dual-purpose platforms.³ Another very complex and more subtle threat to the Canadian Arctic resources is the significant number of Chinese investments in our mining companies. Chinese investment could "reach 5 to 15% of a territory's economy"⁴ as well as asserting their presence by "offering to fill infrastructure gaps in the North"⁵ similar to the massive investments made to several African countries creating economic dependence and increased corruption.⁶ The International fellow with the Glazer Center for Israel-China Policy, Casey Babb said that China "uses foreign investment as a door, as an entry point, to gain access to markets, to gain access to government, to investors as well".⁷ These direct military threats from Russia combined with foreign industrial and surveillance threats from China, pose a considerable menace on our Indigenous communities and our Northern region's fragile eco-system. These challenges require a multi-domain approach from the Canadian Government to address this persistent situation that will significantly influence the future of the defence and security of Canada and North America.

¹ Government of Canada. "Our North: Strong and Free" Defence Policy Update. 2024, 10.

² Graves, Frank. "Canadian attitudes towards defence spending" IKOS survey 31 Jan 2024.

³ Government of Canada. "Our North: Strong and Free" Defence Policy Update. 2024, 4.

⁴ Pressman, Nathalie. "Experts warn about potential risks of foreign investment in Arctic mining" CBC News (April 2024).

⁵ Tunney, Catherine. "CSIS warning Inuit leaders about covert foreign investment in Arctic, documents show" CBC News (Oct 2023).

⁶ Vinicius de Freitas, Marcus. "The Impact of Chinese Investment in Africa: Neocolonialism or Cooperation?" *Policy Center for the New South*. (August 2023).

⁷ Tunney, Catherine. "CSIS warning Inuit leaders about covert foreign investment in Arctic, documents show" CBC News (Oct 2023).

MILITARY CAPABILITIES

The Minister of National Defence speech to the Canadian Global Affairs Institute conference mentions that “both Russia and China are investing in new infrastructure and capabilities in [the Arctic] region. Russia and China see the Arctic as a key to expanding their influence, and they have shown a willingness to work together.”⁸ The lack of investment in NORAD has become an important liability for the US to maintain its continental defense. Despite a 20-year, \$38.6-billion NORAD Modernization program announced by the government in 2022, this ambitious plan needs concrete results in the short, medium, and long term to address the current security environment. These investments need to be developed through all components of the CAF; maritime, land and aerospace capabilities are equally important to maintain our sovereignty.

The National Defence has already identified critical capabilities in the maritime component to achieved key objectives in the Arctic. The region being composed mainly of seawater and ice, the Royal Canadian Navy surface and sub-surface fleet consist of the main platforms to achieve a strategic deterrence effect. The Arctic and Offshore Patrol Ships (AOPS) as well as the upcoming Canadian Surface Combatant (CSC) fleet are a good starting point, but more is required when compared with China and Russia’s maritime capabilities. The acquisition of submarines, either conventional or nuclear,⁹ are invaluable assets to ensure a credible presence under the northern waters, capable of covert surveillance, detection, and deterrence of foreign presence. However, this will need to be more than an exploration from the Federal Government as stated in the latest Defence Policy.¹⁰ The acquisition of specialized maritime sensors will be a significant asset to our defence system, but not sufficient to be credible within NORAD. Another important military capability that requires major investment is the Canadian Coast Guard’s icebreaker fleet, which need to be more powerful to be able to ensure freedom of navigation year-round in the near future.

One of the most concerning threats from Russia is the potential use of nuclear Intercontinental Ballistic Missiles (ICBM) on continental America through the Arctic region, especially with their alleged hypersonic missile capabilities that could supposedly avoid all air defence systems. A new satellite ground station in the Arctic will help detect and track any missile threats, combined with airborne early warning aircraft, although a lack of significant investment in ground-based air defence system will fall short of our NORAD mandate to actively

⁸ Government of Canada. Remarks by Minister of National Defence Bill Blair to the Canadian Global Affairs Institute conference on NORAD Modernization. National Defence, 1 May 2024

⁹ Tumilty, Ryan. “Canada to look at new submarines, and Trudeau doesn’t rule out nuclear option” National Post (April 2024).

¹⁰ Canada. Department of National Defence. “Our North, Strong and Free: A renewed vision for Canada’s Defence.” Ottawa: DND (2024) 24.

control the aerospace of Canada and the United States.¹¹ The 88 F-35s, up to 16 P-8 Poseidon, as well as surveillance and strike drones will support our aerospace presence, but its ability to provide persistent capabilities reminds us that other platforms also need consideration. On top of the RADARSAT Constellation Mission (RCM), and Polar orbit satellite communication, a fleet of airships should be seriously considered and funded immediately to allow a greater mobility and projection of the military forces, better sustainment cycles and persistent aerial platform in the Arctic.¹² As NORAD Commander, U.S. Gen Guillot puts it “the challenge in the Arctic [...] is to make sure that we have freedom of movement.”¹³

The land components also need upgraded capabilities to project and sustain troops in the region, however the critical aspect to force generate in this harsh region is the establishment of a network of Northern Operational Support Hubs to support the soldiers and provide equipment storage. Long Range Missiles capability will consist of the main Army weapons system that could contribute to the region’s defence, along with Ground-based Air Defence systems to protect critical infrastructure. A fleet of Arctic vehicles capable of extended mobility will also be necessary to reach the remote communities and areas.

According to recent surveys, 85 to 89% of Canadians support the Canadian Armed Forces to defend the Arctic.¹⁴ The Government’s commitment to “further contribute to the integrated air and missile defence of Canada and North America”¹⁵ with CSC ships, airborne early warning and control (AWAC) aircrafts, a comprehensive worldwide satellite communication system, and a ground-based Air Defence system needs to be fast-tracked on the procurement agenda. Greater synergy between the Federal Government and the Canadian Defence Industry is the cornerstone to a successful implementation of this updated Defence Policy and to a strong NORAD modernization program capable of projecting a strategic deterrence strategy against Russia and China.

INDUSTRIAL CAPABILITIES

Minister Blair stated in his 1 May 2024 speech to the Canadian Global Affairs Institute Conference that “building a stronger renewed relationship with our defence industry is a key priority for [...] the Department of National Defence and the Government of Canada”.¹⁶ This

¹¹ Agreement between the Government of the United States of America and the Government of Canada on the North American Aerospace Defence Command. Ottawa (2006) 2.

¹² Dr. Qasrawi, Y. and Dr. Abdeslem Boukhtouta. “The potential use of airships to address Canadian Armed Forces Sustainment challenges in the Arctic” Defence Research and Development Canada. Department of National Defence, Ottawa: DND (2023), 9.

¹³ Ritchie, Sarah. “New NOARD Commander wants more U.S. Troops training in Canadian Arctic” National Post (April 2024)

¹⁴ Graves, Frank. “Canadian attitudes towards defence spending” IKOS survey (31 Jan 2024)

¹⁵ Canada. Department of National Defence. “Our North, Strong and Free: A renewed vision for Canada’s Defence.” Ottawa: DND (2024) 27.

¹⁶ Government of Canada. Remarks by Minister of National Defence Bill Blair to the Canadian Global Affairs Institute conference on NORAD Modernization. National Defence, 1 May 2024.

statement couldn't be more on point with the current security environment in the Arctic. He mentions that "strengthening our continental defence and asserting our sovereignty in the North hinges on collaboration with Indigenous and Northern communities."¹⁷ The investments in the Northern region will lead to economic opportunities for the communities, bringing multi-purpose infrastructures as well as "highways, power plants, water treatment plants, and fiber optics communications"¹⁸ to the population. This Defence Policy Update is an important milestone in integrating Indigenous communities into the Government policy development, and Canada's sovereignty in the Arctic relies heavily on the support from those Indigenous Communities in the North¹⁹ for specialized procurement and services, as well as access to natural resources, and the development of the infrastructure required to exploit them.

The National Defence Indigenous Procurement Strategy will generate important positive socio-economic impact while leveraging expertise and knowledge within the Defence Supply Chain. This strategy is critical to achieve the 5% of total DND contract value to Indigenous owned industries²⁰, although this may seem like a pointless target if we don't create capacity-building partnerships with the Indigenous communities. The current National Arctic Strategy document tabled to the Senate for review includes a pillar focused on capacity building with the Indigenous communities.²¹ Greater collaboration is required between the government, the industries, and the Indigenous communities to efficiently address the challenges associated with procurement of capabilities and services specific to the Arctic. A strong community of practice, led by the federal Government, needs to be established to build strong relationships with Indigenous entrepreneurs to expand their knowledge of government procurement mechanism and augment their financial resiliency. More synergy with the Department of National Defence, ISED-C and CIRNAC will improve our ability to efficiently close the loop between local innovation and direct domestic and security application in the Arctic.

The Arctic region contains a significant amount of the world's natural resources, representing an important investment opportunity from foreign countries as well as a threats to Indigenous communities and to Canadians. A resilient supply chain of critical minerals and energy resources needs to be maintained to ensure domestic and continental security. The Government of Canada is currently in the process of submitting a claim to the UN Oceans and law of the sea Commission to formalize the sovereignty of the continental shelf in the Arctic²², leading to potential worldwide recognition of the ownership of those natural resources as well as

¹⁷ Ibid.

¹⁸ Ibid.

¹⁹ Galloway, M. "Protecting Arctic Sovereignty" CBC Listen, April 2024.

²⁰ Defence Construction Canada. "New Procurement Strategy sets course for engaging more Indigenous businesses" (April 2022).

²¹ Canada. Senate of Canada "Arctic National Strategy" Working draft for Senate Review (October 2023).

²² United Nations "Commission on the Limits of the Continental Shelf (CLCS) Outer limits of the continental shelf beyond 200 nautical miles from the baselines: Submissions to the Commission: Partial Submission by Canada" 19 Dec 2022.

the increasingly important use of the North-Western Passage (NWP) as a global sea shipping lane.²³ The large importance of the natural resources in the arctic needs to be leveraged by the Government to gain political advantage over other countries, such as the US and other NATO or Arctic countries, that would benefit from those resources in exchange of a much needed support to the continental shelf claim. Without economic support from the federal government, smaller economy such as the Canadian Territories are more vulnerable to foreign investors like China, which could lead to significant political and industrial influence over the mining corporations and local government's decision-making process.²⁴

The exploitation and protection of those natural resources requires massive investment to build a network of specialized infrastructure in the region. Mixed-use infrastructure and multipurpose facilities are boosting the military presence in the Arctic²⁵ and are essential to develop capabilities and capacity between the military, the indigenous communities, and the industrial sector.²⁶ A combination of public and private investments to develop roads, railways, deep-water ports, communications networks, and social services facilities, such as schools and hospitals, is much needed to increase the productivity of the indigenous communities and mining corporations. These investments also need to be resilient to malicious foreign actors trying to gain political and financial leverage through the natural resources network and local indigenous governance.

The local indigenous communities in the Arctic are endless sources of experience and knowledge that could enable military operations and support industry sector while improving the quality of life in the region and contributing significantly to our domestic and continental defence and security. Robust and stable Northern communities represent a strong Arctic with greater access to natural resources and critical minerals that will support the sovereignty of the region. With a deliberate infrastructure development plan, there will be significant durable benefits to all northern stakeholders to increase their activities. This Northern presence is critical to monitoring activities and further legitimize the Arctic sovereignty of Canada in the region.

MONITORING CAPABILITIES

The significant investments in military capabilities, combined with the industrial capabilities to exploit natural resources and critical minerals in the Arctic, need to be complemented by assets able to permanently monitor the region. To properly control and achieve its strategic objectives, the Canadian Government needs to clearly understand what activities influence this eco-system. A constant situational awareness and a clear operating picture of the

²³ Nakano, Jane and William Li. "China launches the Polar Silk Road" Center for Strategic & International Studies. 12 February 2018.

²⁴ Pressman, Nathalie. "Experts warn about potential risks of foreign investment in Arctic mining" CBC News (April 2024).

²⁵ Williams, Ollie. "Work Begin on new Canadian Rangers, JTFN facility in Yellowknife" Cabin Radio (April 2024)

²⁶ Galloway, M. "Protecting Arctic Sovereignty" CBC Listen, April 2024.

region is necessary to enable timely and relevant decision-making. The monitoring of the region can be done with military capabilities to inform the National Defence and the Canadian Government from a Defence perspective. It can also be done through civilian assets who collect information on relevant political, economic, social, information and industrial influencers.

Significant improvement to the CAF capabilities is required to conduct surveillance and deterrence of the maritime avenues of approach on all three coasts, in the space, the air, the surface and underwater.²⁷ The current capabilities are quickly becoming obsolete in this new security environment, and the radar station and military airframes are not currently meeting the requirements for the NORAD mission. NORAD Commander, U.S. Gen Guillot mentioned that “We are now reaching out to NATO and others to see if we can build a network to get awareness earlier”²⁸ in order to fill the current gap in the obsolete North Warning System. Minister of National Defence Blair says that the Government’s “intent is to build several interoperable over the horizon radars across our two nations to enable our decision-makers a clear 360-degree picture of incoming threats.”²⁹ This monitoring system will also include specialized marine sensors to detect any foreign underwater presence, and a new station in the Arctic to improve satellite communication. There is still important work to be done to identify and secure the funding to acquire underwater surveillance system for the Arctic, which are critical to our continental defence. A fleet of airships would also greatly enable the monitoring capability of the CAF and OGD’s by adding persistent surveillance platform in the region, complementing the future fleet of AWACs already identified in the updated Defence Policy. Finally, a network of permanent military bases in the Arctic with sustainment nodes would allow a physical presence of the Canadian, US³⁰ and allied military in the region, improving interoperability amongst NATO countries and the collaboration with the Canadian Rangers and the Indigenous communities.

These investments and additional military capabilities are a step in the right direction, although it must not be seen in isolation from the other civilian capabilities provided by other agencies such as the Canadian Space Agency (CSA), the Canadian Coast Guard (CCG), the Communication and Security Establishment (CSE), the Canadian Security and Intelligence Services (CSIS), and the Economic and Social Development Canada (ESDC) to name only a few. The Defence Industry is also a significant contributor of the monitoring capabilities in the Arctic, such as MDA and Telesat. The threat to the Arctic region comes from all directions and the Defence of the Arctic needs to consider all of them to continue developing a comprehensive

²⁷ Canada. Department of National Defence. “Our North, Strong and Free: A renewed vision for Canada’s Defence.” Ottawa: DND, 2024.

²⁸ Ritchie, Sarah. “New NORAD Commander wants more U.S. Troops training in Canadian Arctic” National Post (April 2024)

²⁹ Government of Canada. Remarks by Minister of National Defence Bill Blair to the Canadian Global Affairs Institute conference on NORAD Modernization. National Defence, 1 May 2024.

³⁰ Ritchie, Sarah. “New NOARD Commander wants more U.S. Troops training in Canadian Arctic” National Post (April 2024)

National Arctic Strategy. Firstly, physical monitoring of the region is critical to maintain its sovereignty, which can be done through satellite capabilities³¹, maritime patrol by the CGG's heavy and medium icebreaker fleet and most importantly by the indigenous communities. The information collected by all these sources needs to be collated to create a common operating picture to inform the Government and the stakeholders involved on what is happening in the Arctic. Secondly, the monitoring of the cyber and information domain is equally, if not more important than the physical domain. Foreign entities are increasingly active in the Northern region to influence specific areas of interests, such as natural resources exploitation, access to shipping lanes through the NWP, and scientific research endeavors. Indigenous communities, local and territorial governments are constantly engaged by Chinese corporations to increase their collaboration in exchange of significant investment in the mining corporation³², and possibly offering social and infrastructure development in the future³³ to support the extraction operation. The Polar Silk Road Initiative by the Chinese Government is a testament of their great interest in developing capacities in the region, with an estimated cumulative \$19 billion US dollars investment in the Canadian mineral sector. An open and transparent consultation process between the federal Government's agencies, the Northern population and the industry is paramount to prevent and deter further foreign intrusion in the Canadian Arctic environment.

It is imperative that Canada monitors closely the Arctic activities led by foreign entities to ensure the legitimacy of the region from a political, military, economic, social, informational and infrastructure (PMESII³⁴) point of view. Military monitoring capabilities are an important part of this strategy with upgraded radar systems, satellites, and underwater sensors. The development and implementation of such assets will take time and significant investment, hence civilian capabilities are critical to bridge this gap while empowering the Indigenous communities to act for the legitimacy of the Arctic region. Informed government and population, enabled by an overarching National Arctic Strategy needs to be implemented immediately.

CONCLUSION

Some would say this Defence Policy Update is 'too little, too late' to be credible in the Arctic.³⁵ The lack of an updated Foreign Policy remains a significant gap towards a holistic approach to the North, limiting the long-term impact of these commitments to a mere electoral agenda. The National Arctic Strategy is still unpublished by the Government and lacks in security and defence commitments compared to our US allies approach.³⁶ The Government is falling short

³¹ MDA provides a comprehensive suite of observation satellite through the RADARSAT Constellation Mission.

³² Oddleifson, Evan, Tom Alton, and Scott N. Romaniuk. "China in the Canadian Arctic: Context, Issues, and Considerations for 2021 and Beyond" University of Alberta: The China Institute. 12 January 2021.

³³ Nakano, Jane and William Li. "China launches the Polar Silk Road" Center for Strategic & International Studies. 12 February 2018.

³⁴ PMESII is a widely known analytical tool in the Canadian military to evaluate the operational environment with 6 operational variables.

³⁵ O'Toole, Erin. "DPU Roundtable" Canadian Defence Review Radio Episode 43

³⁶ United States. The White House, *National Strategy for the Arctic Region*. Washington DC. October 2022.

of its own engagement at the Vilnius Summit in 2023 to reach 2% of the GDP towards Defence spending; a former ADM (Mat) even criticizing the Defence Policy Update as a costing disaster.³⁷ The emphasis on the North seems like a desperate effort to regain credibility amongst NATO countries and may even be a gauche attempt in trying to join AUKUS. One thing is certain, the importance of the Arctic region needs to be at the forefront of the Canadian society and therefore must become a multipartisan strategy to develop credible and viable generational capabilities. A governance framework still needs to be developed with all stakeholders to successfully implement a multi-domain pan-governmental National Arctic sovereignty Strategy. Similar to when the Federal Government created the Office of the Coordinator for 2010 Olympics and G8 Security (OCS)³⁸, the Privy Council Office should create a senior appointment to the Prime Minister as the National Arctic Advisor. This senior appointed official, equivalent to the National Security and Intelligence Advisor, would oversee the coordination between all the level of Governments, OGDs, the industrial sectors, the communities, and NGOs to develop a sustainable and secure Arctic Strategy. The importance of the Canadian and North American Arctic region will only increase over time, hence the urgency of the Federal Government to attend to the development of a concrete strategy and its expeditious implementation.

³⁷ Williams, Alan. “DPU Roundtable” Canadian Defence Review Radio Episode 43

³⁸ McIntyre, Susan and Kate Kaminska. “Multi-Organizational Collaborative Public Safety and Security Planning for the 2010 Vancouver Winter Games” DRDC – Centre for Security Science, Ottawa (Nov 2012).

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