

White Paper



# Continental defence modernization

Canada's investment in its sovereignty

## Continental defence modernization investments

The Minister of National Defence laid out Canada's plans for investing in continental defence modernization in June 2022, representing \$4.9 billion in investment in the short and medium term, and an additional \$38.6 billion over 20 years.<sup>1</sup> Canada's investments cover a wide range of capability types, including land- and space-based systems for monitoring and surveillance of the approaches to North America, infrastructure to support all northern operations including for fighter planes, and the command and control systems to integrate data flows, build situational awareness, and support decision-making. These investments will improve multi-domain awareness of threats to Canada's sovereignty, and will enable Canada to counter those threats with military forces, where necessary.

Continental defence modernization also provides Canada with an exceptional opportunity to choose Canadian prime contractors, manufacturers and suppliers to design, build and deliver many of these capabilities. With billions of dollars of investment coming, Canada should buy Canadian wherever feasible to keep as many benefits at home as possible. Investment in Canadian companies delivers good-paying jobs in communities from coast to coast to coast, supports innovation and commercialization of new solutions, and develops small/medium businesses and supply chains in Canada—not abroad.

## The importance of continental defence modernization investments

### Protecting our sovereignty and our security

Canada is set to accelerate its defence spending to reach the two per cent of GDP target for all NATO members. There are many voices within NATO—including the Secretary General—calling on NATO member states to consider spending considerably more than a three per cent of GDP target to improve military capability and preparedness.<sup>2</sup> The current threats posed by Russia, China and other states have many facets, including conventional land-based threats in Europe, threats to airspace from aircraft, surveillance platforms and hypersonic missiles, and threats to maritime sovereignty from unauthorized or hostile shipping—especially in Canada's Arctic.

All of these threats represent challenges to our national sovereignty and must therefore be countered. Balloons have infiltrated Canadian airspace and air threats regularly pass close to Canadian airspace. As icepack in the North melts and previously iced-over shipping lanes open up, the scale of the threat from surface vessels and submarines to Canada's sovereignty is likely to grow. Canada's North is abundant in energy and mineral resources, and foreign powers may seek to access them at Canada's expense without adequate defence of our national sovereignty. Maintaining awareness of threats to our air, land and sea is imperative, and investments in continental defence modernization will improve Canada's ability to sense and respond.





In the digital era, installations, infrastructure, networks, equipment and devices all need to be protected from cyberattack and other electronic intrusion. This is especially important for Canada's planned fighter capability and multi-mission maritime patrol aircraft, both of which are exceptionally capable platforms that require data security to protect critical advantages over adversaries. Space capabilities provide essential earth sensing data and provide secure communication to relay tactical data for situational awareness and decision-making. Top secret information is essential for Canada's national interest and it must be protected everywhere, including in Canada's North.

### Contributing to NORAD

Canada and the United States share the longest undefended border in the world. Since 1958, Canada and the U.S. have cooperated on the defence of the maritime and aerospace approaches to North America to collectively defend our sovereignty. Even with recent tensions between both nations on trade, border security and defence spending, this commitment is essential for Canada. The American Commander of NORAD, General Guillot, made clear in a 2025 address that Canadian and American air assets are regularly used interchangeably in the defence of North American aerospace based on threat and mission capability, not the country that operates them.<sup>3</sup>

### Investment areas

Calian has made-in-Canada capabilities for many continental defence modernization programs. With manufacturing facilities in Vaudreuil-Dorion, Ottawa and Saskatoon, Calian designs, builds, tests and delivers solutions for defence customers at home and internationally, including for space agencies, military customers and prime defence contractors.

### Satellite communications

Calian has four decades of experience and expertise delivering ground-based solutions to support satellite communications. Our antennas and ground stations are world-class, ranging from 1m to 35m for applications in low-Earth orbit, medium-Earth orbit, geostationary orbit and deep space communications. We also deliver satellite communications gateways to connect platforms and vehicles with services on-orbit for reliable global communications.



## Arctic Over-the-Horizon Radar (A-OTHR)

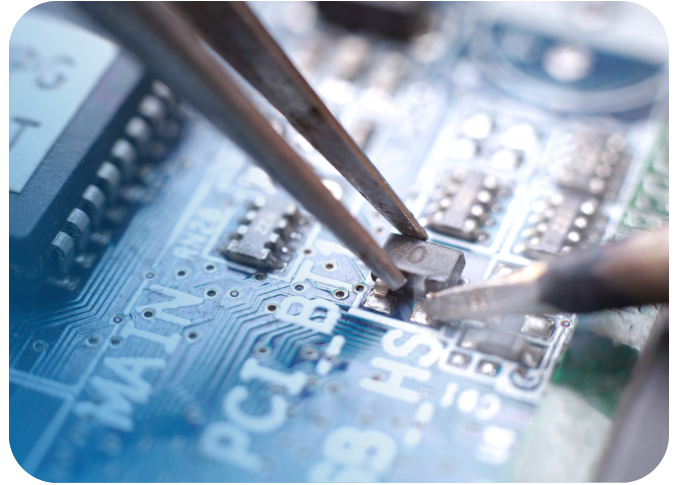
Canada's A-OTHR solution will provide sensing for detection and early warning of objects in Canada's Arctic latitudes. Thousands of antennas will provide the array to enhance situational awareness. Calian designs, builds and operates complex RF ground equipment, including receivers, transmitters and integrated systems. Our IT infrastructure team can provide containerized, rack-mounted network solutions that are resilient to cyber attack and can transmit information to our Protected B secure cloud with Canadian data sovereignty, where AI-enabled data analytics can be applied. Our advanced manufacturing team delivers any system and component for large defence programs, including land, maritime and space applications. With decades of experience in land-based space and communications systems, Calian stands ready to provide Canadian input to the A-OTHR program.

## Arctic ground station

Calian has delivered hundreds of ground stations over our 40-plus year history, and we delivered them on all continents in all climates—including tundra, desert, littoral, jungle and temperate forest. We have delivered ground stations in the Caribbean, the Australian outback, and Canada's high north. We design, develop and deliver complete ground stations including the antenna and all data and control equipment to maintain contact with satellites in orbit. We deliver for every application at any orbital altitude, including for deep space. We have delivered multiple ground stations in Canada's Arctic for commercial and civil customers and have a proven record of collaboration with Inuit communities and companies as part of delivery in Canada's North.

## Aero/space command and control

Leaders need accurate, timely information to make informed decisions. For aero/space operations, data feeds from land, maritime-, air- and space-based sensors are integrating into a common operating picture to provide situational awareness and a single version of the truth in a common operating picture (COP). Calian connects data feeds from multiple sensors and platforms, taking a systems-agnostic approach. Using our virtual command and control interface (VCCI), we connect data feeds from any sensor to bring knowledge together in one place. We have also conducted advanced research projects on using human-autonomous teaming to provide humans with an AI-enabled co-pilot to reduce cognitive load and stress while conducting aerospace control operations. These integration operations enable greater situational awareness and deliver accurate information on which to base operational decisions.





## Data sovereignty

Cloud-based data solutions are fast and effective for storing and accessing massive amounts of data for any application. There are concerns that data in centres abroad may compromise national sovereignty. Calian knows that sovereign data solutions are essential to ensuring that foreign governments or actors do not access cloud-based data without the owner's knowledge. Data sovereign solutions provide all the benefits of cloud storage: security of data, redundancy, rapid access and scalable solutions. With Calian data sovereign solutions, you can be sure your data is not accessed by foreign governments or actors, while delivering the security and reliability of cloud solutions. Canadian-made data sovereign solutions are essential to keeping data safe from unauthorized access.



## Secure facilities and infrastructure

Security of data for large organizations is more than just devices. Security of facilities and installations, infrastructure and networks, and other endpoints are all required to ensure enterprise-level security of your information. Calian is a Canadian leader in emissions security, threat assessments, pen testing, security operations centre/network operations centre, and incident response for cybersecurity. Using TEMPEST-certified devices, we secure your data by taking a systems-level approach to ensure your data and the facilities where they are used are secured from unauthorized access. Government customers with high-security needs trust us to secure their facilities and infrastructure.

## References

1. Government of Canada, "Fact sheet: Funding for Continental Defence and NORAD Modernization," Minister of National Defence. 7 July 2022. <https://www.canada.ca/en/department-national-defence/services/operations/allies-partners/norad/facesheet-funding-norad-modernization.html>
2. Paul McLeary, Joshua Posaner, "Rutte: NATO spending target will be 'considerably more than 3 percent'," Politico. 15 February 2025. <https://www.politico.eu/article/mark-rutte-nato-defense-spending-target-considerably-more-3-percent-munich-security-conference/>
3. CPAC, Public Record: Ottawa Conference on Security and Defence – Day 1. 5 March 2025. <https://cpac.ca/public-record/episode/ottawa-conference-on-security-and-defence--day-1?id=c904a4cd-48fd-4d9b-b8f4-433768327c45>



Calian® helps people communicate, innovate, learn and lead safe and healthy lives. Every day, our team embodies our core principles of unwavering customer commitment, integrity, innovation, respect and teamwork, to engineer reliable solutions that solve complex challenges. That's Confidence. Engineered.

We are a growing company headquartered in Ottawa with offices and projects spanning North American, European and international markets with a focus on innovative healthcare, communications, learning and cybersecurity solutions.