White Paper

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Connecting mission-critical systems: A sovereign platform for C5ISRT interoperability

How ATHORA™ will enable Canada to connect mission-critical systems, unlock interoperability and lead with sovereign digital capability

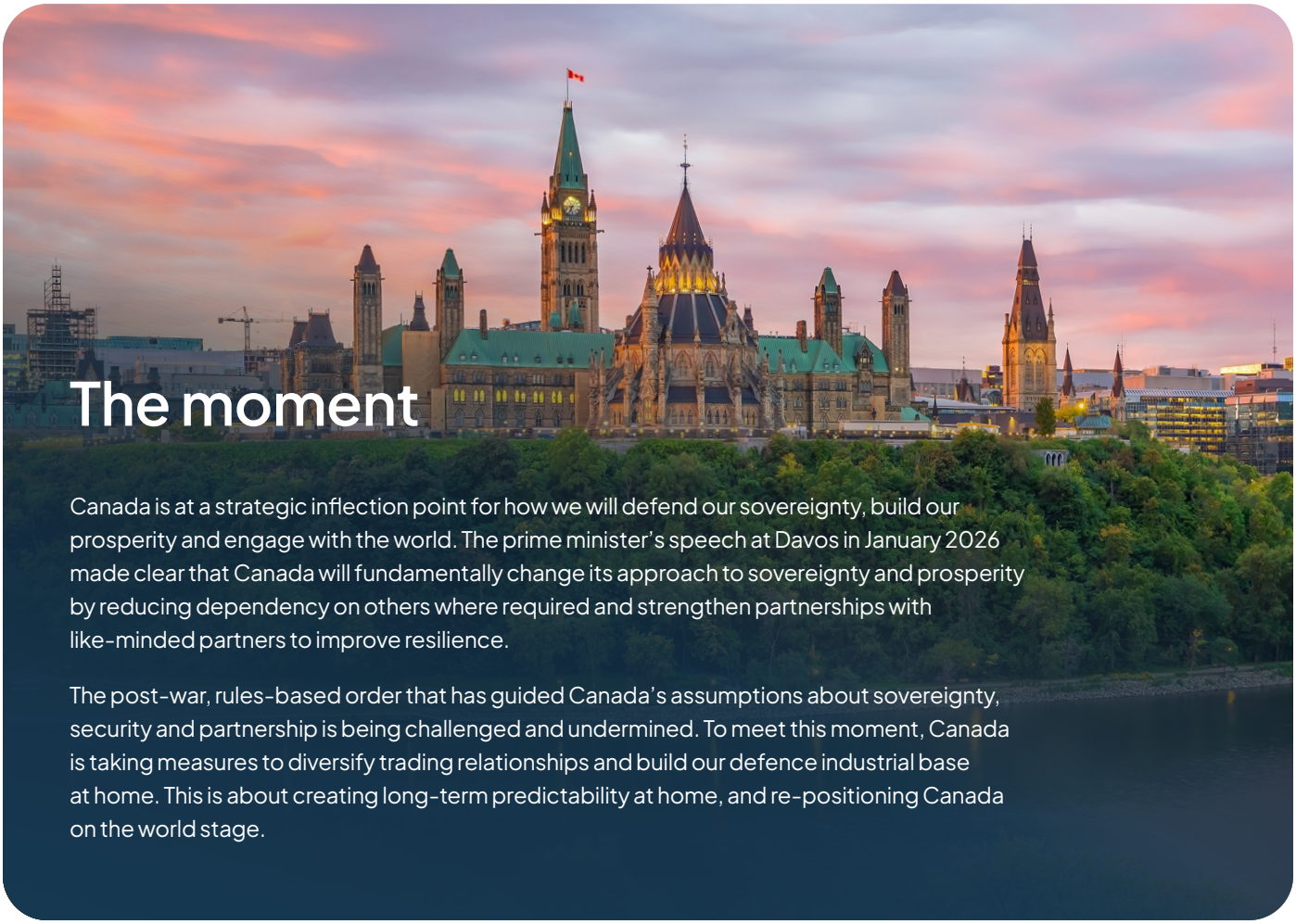
Executive summary

Digital integration for Canada's military is currently challenged by the growing number of systems and sensors—many relying on different information sharing protocols and standards—and the lack of an architecture or integration platform to bring all the data together. This paper provides a strategic concept for delivering a sovereign, open systems-of-systems C5ISRT integration capability for Canada.

The growing number of sensing technologies on the modern battlefield and the speed at which they are being adopted are making the C5ISRT space more crowded and more complex, and there is no clear pathway or concept for networking those sensors in a common architecture. Data from land, sea, air, space, cyber and electromagnetic platforms are being combined to support communications, build situational awareness and enable timely decision-making. It matters less where the data comes from than being able to integrate it into a common architecture.

Calian is developing ATHORA™, a sovereign system-of-systems interoperability and orchestration platform, to accelerate military operational readiness and capability integration across evolving C5ISRT environments. Ukraine's DELTA system has been highlighted as a leading benchmark for C2 interoperability, and the U.S. Army's recent Right to Integrate hackathon underscores the growing push to open architectures and accelerate integration around models that resemble DELTA—such as ATHORA.

Calian will lead the development of the ATHORA system-of-systems integration platform with collaboration from small-medium businesses (SMBs), mid-market players and existing large companies to deliver a sovereign capability for Canada.



The moment

Canada is at a strategic inflection point for how we will defend our sovereignty, build our prosperity and engage with the world. The prime minister's speech at Davos in January 2026 made clear that Canada will fundamentally change its approach to sovereignty and prosperity by reducing dependency on others where required and strengthen partnerships with like-minded partners to improve resilience.

The post-war, rules-based order that has guided Canada's assumptions about sovereignty, security and partnership is being challenged and undermined. To meet this moment, Canada is taking measures to diversify trading relationships and build our defence industrial base at home. This is about creating long-term predictability at home, and re-positioning Canada on the world stage.

Digital modernization

Wars in Ukraine and the Middle East are showing the battlefield advantage of having better information, faster. Connecting data from multiple sources allows faster sensing and decision-making in the battlespace. In a digital era, this means moving data from sensors to decision-makers faster and more reliably than an adversary can do the same. It's about maintaining a decision advantage through better awareness, delivered by digital solutions.

The Canadian Armed Forces (CAF) understands the need for digital integration to maintain a decision advantage in any operating environment and context. Our North, Strong and Free (ONSAF) outlines the military capabilities that Canada will procure for land, maritime, air, cyber and space operations, and the joint enablers required to connect the components together.

The Canadian Army is moving forward with plans for modernization, outlined in Inflection Point 2025. Digital infrastructure and integration are central to realizing this vision. The Royal Canadian Navy (RCN) released a Digital Navy Initiative that emphasizes that the RCN will adopt a data-centric mindset, digital infrastructure and emphasize interconnected systems to contribute maritime power to the joint force. The Royal Canadian Air Force (RCAF) will be central to NORAD modernization through space domain awareness and command-and-control programs.

Integration challenges

Any digital integration solution needs to meet the needs of the modern operating environment. This means delivering capability to meet C5ISRT needs.

Digital integration is at the core of all these objectives. But there are many challenges to realizing this vision.

Lack of a Canadian industrial champion

There is currently no sovereign C5ISRT systems provider in Canada. Much of the existing capability is delivered by foreign-owned defence companies, which often means proprietary data standards. These can be a barrier to industry-wide participation and increase the cost of integration.

Data sovereignty

There is no sovereign data solution currently available. Some data resides in Canada, but most of it runs on non-Canadian hardware and systems.

Pace of technology development

Technology development for digital systems is moving faster than integration concepts and structure can often keep pace with.

SMB integration cost

Integration can be costly—especially for small-medium businesses (SMBs). The cost of integration can present a barrier for SMBs with C5ISRT solutions, preventing them from being part of leading-edge solutions.

Without changing the way Canada does C5SIRT integration, the best sovereign capabilities—including from SMBs—will face challenges in delivering digital modernization that harnesses the best of Canada's defence industrial base.

Calian presents a vision for how to deliver a more flexible, open C5ISRT integration platform.

ATHORA—sovereign integration and orchestration solution

Calian's purpose is clear: to design and develop a sovereign system-of-systems (SoS) C5ISRT platform, using an agile, open, and sovereign environment. ATHORA will support pan-domain CAF operations by delivering an open architecture for integrating data from existing platforms and sensors and will be configured to integrate data from platforms and sensors that are scheduled to be coming into CAF service in the 2030s.

Calian will collaborate directly with the CAF to ensure that we are meeting their operational requirements. Our approach also includes a clear intent to connect other parts of the defence industrial base into the C5ISRT ecosystem. This means SMBs and the existing players will be able to work with Calian on the big, complex integration challenges. ATHORA will reduce the structural barriers to participation in C5SIRT integration across the Canadian defence industrial base. ATHORA will consist of four layers:

1. **SoS interoperability and orchestration**: To enable a sovereign, agile and open (continuous evolution), standalone integration/interoperability capability, Canada needs a next-generation sovereign multi-system SoS interoperability orchestration capability to consolidate a sovereign C5ISRT interoperability approach.

2. **Data interoperability**: This layer will consolidate access in a unified, secure-by-design, data-centric approach across distributed data sources for pan-domain operations. This will set the foundation to enable algorithms and applications to process data in near-real-time for relevance on the modern battlefield.

3. **Network, communications and security**: This layer will connect layers 1 and 2 inside CAF networks as part of existing and future digital integration and modernization projects.

4. **Engineering, IT and sustainment**: Improved engineering processes will be required to deliver layers 1, 2 and 3. Using agile development approaches in collaboration with industry, SMBs, academia and the CAF will sustain the ATHORA capability.

Calian has decades of experience working with the CAF—Army, RCAF and RCN. We bring a continuity of understanding and technology governance knowledge that sets us apart from other players. Interoperability and common architecture present challenges for all command-and-control projects. The ATHORA concept is built on our decades of experience and understanding of this space.

Calian will lead the development of ATHORA… but we won't do it alone.

We will integrate SMBs that are developing leading-edge technologies, mid-market partners with proven technologies and track records, and connect with large prime contractors that are often the manufacturers of sensors and platforms. This is about lowering barriers to accessing programs for SMBs. This approach will bring the right Canadian partners together to build the digital systems that are key to sovereign capability.

ATHORA is not about building one company. It's about bringing the best of the Canadian defence industrial base—established and emerging companies—to deliver sovereign system-of-systems capability for Canada.

Benefits for Canada

Building and delivering ATHORA for Canada will deliver an operational solution for the CAF and will also bring clear defence industrial benefits to Canada.

- **Sovereign capability:** Delivering the ATHORA platform will generate greater sovereign capability in the Digital Systems key sovereign capability area identified in the Defence Industrial Strategy. Developing ATHORA at home will reduce dependency on foreign suppliers and will develop greater domestic defence industrial capacity to deliver.
- **Data sovereignty:** ATHORA will improve data sovereignty by relying on Canadian companies and hardware wherever possible. Using secure systems and technology will deliver reliable, compliant systems to maximize operational security for the CAF.
- **Developing the defence industrial base:** Delivering ATHORA will be a team Canada effort, involving small, medium and large defence companies. Calian won't do this alone. We seek a team Canada approach, which will make the whole defence industrial base stronger.
- **SMB development:** Using the Calian VENTURES program, we will continue to integrate Canadian SMBs with new, novel and innovative capabilities. VENTURES helps SMBs overcome barriers and scaling challenges by integrating them into Calian's delivery. Ninety per cent of Canada's defence sector is made up of SMBs, and they bring leading-edge innovation to ATHORA.
- **Supply chain development:** By working across the defence industrial base, ATHORA will help develop defence supply chains in Canada. Calian wants to be a key "Build" partner in Canada's "Build-Partner-Buy" framework by bringing Canadian companies together to strengthen domestic defence supply chains.
- **Post-secondary partnerships:** Calian has a long legacy of collaborating with universities and post-secondary research institutions. To deliver ATHORA, we will expand these existing partnerships.
- **ITB value:** By choosing Canadian partners, suppliers and universities, ATHORA will generate hundreds of millions of ITB credits.

Meeting the challenge of the moment

Canada is facing international challenges on defence, trade and our sovereignty. From those challenges comes the opportunity to make the most of increased investment in our national defence and our defence industrial base. ATHORA will change the way we do C5ISRT integration in Canada by delivering a new system-of-systems integration platform. ATHORA will leverage the existing scale and expertise of larger and mid-market Canadian companies, while integrating leading-edge SMB capabilities.

ATHORA will deliver a new platform by thinking differently about capability development.

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For over 40 years, Calian has delivered mission-critical solutions when failure is not an option. Trusted worldwide, we empower organizations in critical industries to overcome obstacles, manage risks and drive progress. By combining the expertise of our people, proven industry insight, cutting-edge technology, bold innovation and global reach, we deliver tailored solutions that solve complex challenges. Headquartered in Ottawa, Canada, with over 6,000 people around the world, Calian's solutions protect lives, strengthen security, foster global connectivity and drive economic progress, making a lasting impact where and when it matters most.

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