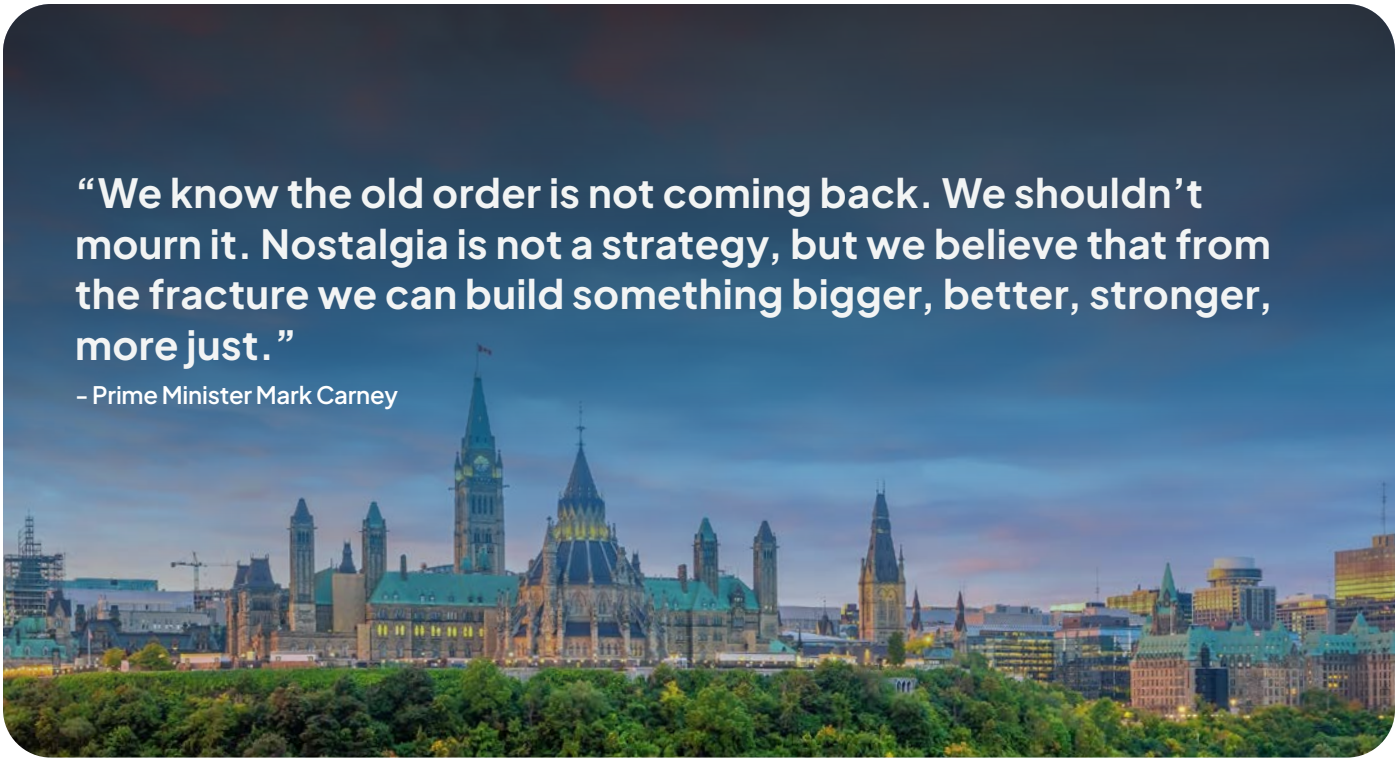
White Paper

CALIAN®

Confidence. Engineered.

C5ISRT and the Future of Canadian Defence

How integrated, sovereign C5ISRT enables Canada to operate with confidence, assert Arctic sovereignty and remain a credible allied force in a contested world.



Executive Summary

Canada is operating in a security environment defined by sustained geopolitical tension, rapid technological change, and the return of state-on-state competition. The modern battlefield is no longer bound by geography, domain or phase of conflict. Operations now unfold simultaneously across land, air, maritime, cyber, space and the electromagnetic spectrum, often below the threshold of armed conflict, and with little warning.

In this environment, mission success depends on confidence—confidence in the ability to see, decide, communicate, coordinate and act faster than an adversary. It depends on confidence that systems will interoperate seamlessly with allies, that soldiers, sailors, aviators and operators are trained the way they will fight, and that Canada can assert and sustain sovereignty, particularly in the Arctic, under contested conditions. And that confidence can only come from a sovereign C5ISRT system that is compatible with Five Eyes (FVEY) and NATO forces while owned, controlled and maintained by Canada.

Command, control, communications, computers, cyber, intelligence, surveillance, reconnaissance, and targeting, supported by integrated training and sustainment, collectively referred to as C5ISRT, has become the operational backbone of modern defence. This paper outlines why C5ISRT is central to Canada’s defence future, how it underpins readiness, sovereignty and alliance credibility, and why Calian is uniquely positioned to serve as Canada’s systems integrator of choice in this domain.

The Geopolitical Reality

The global security environment has entered a period of prolonged instability. Russia’s invasion of Ukraine, strategic competition with China, persistent grey zone activity, cyber and information warfare, and the weaponization of space, have reshaped how conflict is conducted and deterred. Climate change is opening new theatres, particularly in the Arctic, while simultaneously increasing the frequency of domestic response operations.

Canada is no longer insulated by geography nor protected by unquestioned alliances. Long range weapons, cyber operations, space-based sensing and information warfare compress distance and time. The Arctic, once a remote buffer, is now a contested operational environment central to North American defence, alliance deterrence and Canadian sovereignty.

In this context, defence readiness is not episodic. It is continuous.

The Modern Battlefield

The modern battlefield is defined by complexity, speed and convergence. Sensors generate vast amounts of data. Decisions must be made faster and with greater precision. Data is a strategic asset, and how it is managed, protected, controlled, analyzed and acted upon is as critical as any physical platform. Operations increasingly involve joint, combined and multi-domain forces operating across dispersed geographies.

Success depends on the ability to integrate:

- Systems and platforms across domains
- Sensors, networks and communications
- Cyber and electromagnetic effects
- Human decision-making based on trusted data, analytics and decision support
- Training, rehearsal and live operations

Fragmented systems, stovepiped data, and training environments disconnected from operational tools create risk. Integration reduces it.

Train as You Will Fight

Modern forces cannot rely solely on live training. It is too expensive and inefficient for the development of many skill sets. The pace of change, cost of platforms and operational demands require training models that are flexible, repeatable and realistic.

Training as you fight means:

- Seamlessly integrated live, virtual and constructive environments
- Exercising within realistic joint and coalition operations
- Operating in contested cyber and electromagnetic conditions
- Incorporating space- and Arctic-specific scenarios
- Using data analytics to measure readiness and performance

Synthetic and digital environments are no longer optional. They are foundational to readiness, interoperability and confidence in mission execution.

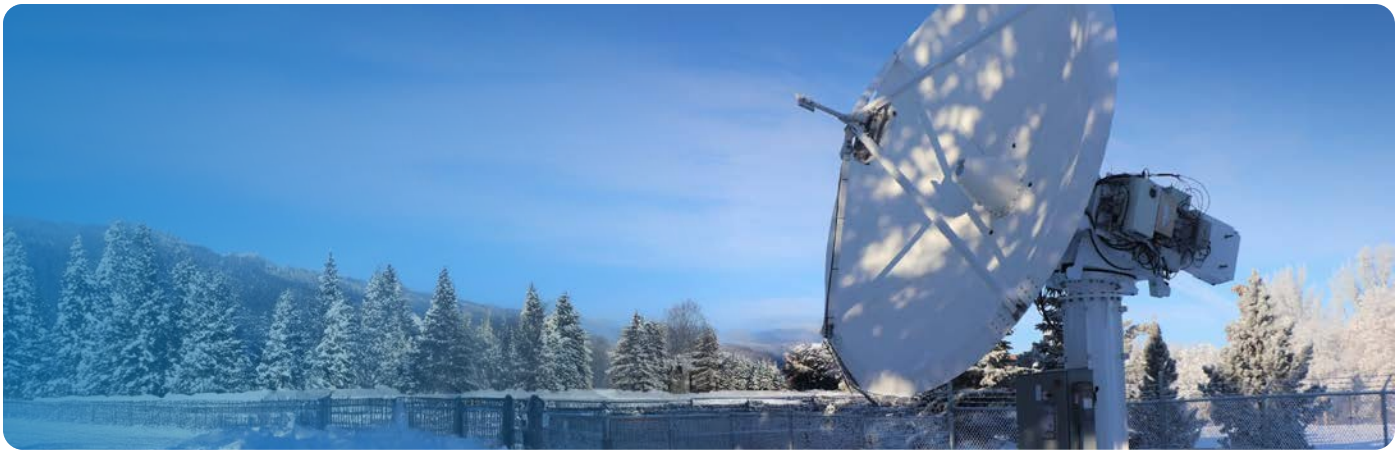
Sense – Communicate – Decide - Act

At the core of modern operations is the ability to move from sensing to decision to action faster than an adversary, using data that is trusted, secure and under sovereign control.

This requires:

- Persistent sensing that generates relevant and real-time data
- Secure, resilient communications
- Advanced analytics and decision support
- Integrated command and control
- Trusted human machine teaming

C5ISRT provides the framework through which data becomes an operational advantage, ensuring that data is collected, managed, protected, analyzed and acted upon in a manner that preserves operational freedom and national sovereignty.



Why C5ISRT Matters for Canada

C5ISRT is not a collection of technologies. It is a purposeful system of systems that governs how data flows across sensors, platforms, networks and command structures, enabling Canada to:

- Assure sovereignty, particularly in the Arctic
- Maintain credible deterrence through interoperability with allies
- Respond rapidly and successfully to domestic and expeditionary operations
- Sustain readiness over time
- Ensure that Canada can integrate with NATO and Five Eyes partners to strengthen resilience in the North and on global operations

The true effectiveness of C5ISRT is not measured at the moment of acquisition, but by how well systems are integrated, supported, modernized, secured and sustained over decades. To ensure the system is most effective requires a unified vision and purposeful design.

Arctic Sovereignty as a Through Line

The Arctic is a defining feature of Canada's defence posture. It is remote, harsh, infrastructure-constrained and increasingly contested.

Operating in the Arctic demands:

- Resilient communications and sensing
- Space-enabled situational awareness
- Integrated command and control
- Distributed training and rehearsal
- Sustainment under austere conditions

C5ISRT is the enabler that allows Canada to operate with confidence in the North, assert sovereignty and integrate seamlessly with NORAD and allied forces.

The Role of Systems Integration

The challenge is not a lack of technology. It is the absence of coherent integration.

Modern defence requires a systems integrator that can assume accountability for data as well as systems, and:

- Connect programs, platforms and data
- Integrate training, operations and sustainment
- Maintain interoperability over time
- Protect sovereign and partner data, intellectual property and operational insights
- Operate at scale and under real-world conditions

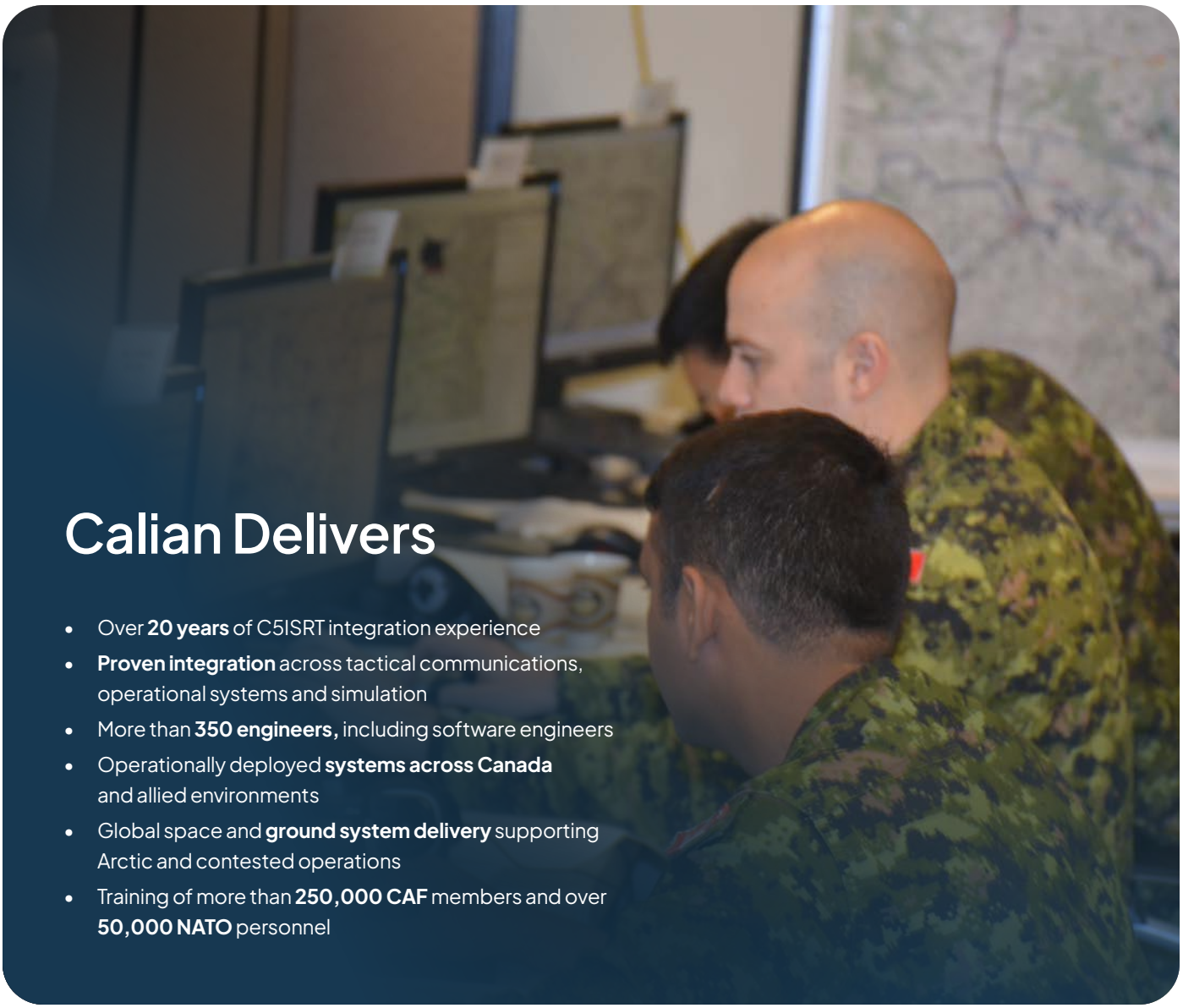
Calian as Canada's C5ISRT Systems Integrator

Calian brings together the tools, technology, people and partners required to integrate and sustain C5ISRT capabilities at scale, with a strong emphasis on data governance, security and sovereign control.

Calian is a bedrock partner in the North, helping Canada project sovereignty in the Arctic through:

- Indigenous partners that ensure responsible and ethical defence development
- Northern-based employees who provide medical and emergency response services
- Arctic-capable sensors purposefully built to perform in the harsh environment
- Experience as a mission-critical communications installer for satellite ground stations and a growing network of undersea fibreoptic cables

Calian delivers mission-critical solutions across operations, training and in-service support, providing continuity and confidence throughout the capability lifecycle while ensuring that sensitive operational data remains protected, trusted and under Canadian control.



Calian Delivers

- Over **20 years** of C5ISRT integration experience
- **Proven integration** across tactical communications, operational systems and simulation
- More than **350 engineers,** including software engineers
- Operationally deployed **systems across Canada** and allied environments
- Global space and **ground system delivery** supporting Arctic and contested operations
- Training of more than **250,000 CAF** members and over **50,000 NATO** personnel

Partnering for Sovereign Capability

Canada's defence future depends on strong partnerships across government, industry, academia and allies to deliver a Canadian-owned, controlled and maintained C5ISRT capability that is compatible with allies.

Calian's role is to use its enterprise-level engineering teams to develop and integrate these elements into coherent, operationally ready C5ISRT ecosystems that strengthen sovereignty while enabling alliance interoperability.

Calian VENTURES: Scaling Canadian Defence solutions

Calian VENTURES is Canada's defence innovation orchestrator, helping small and medium-sized enterprises, government and partners scale proven Canadian defence solutions into sovereign capabilities.

Calian VENTURES focuses on three core streams: C2 support systems, autonomous systems and space orchestration, all aimed at creating value across C5ISRT environments. By strategically partnering with SMEs that have developed innovative viable solutions and fit within the three core streams, Calian is helping Canada's military adopt and utilize sovereign capabilities.

Calian will help test, validate and scale technologies into Canadian and allied procurements by leveraging its own engineering expertise, integrated solutions and trusted CAF relationships.

Calian has committed to invest over $100M in Calian VENTURES funding to establish regionally based C5ISRT labs across Canada with priorities to support the Arctic.

Conclusion

The geopolitical environment and the character of conflict have changed. Geography no longer guarantees security. Readiness demands are continuous. Sovereignty must be actively asserted, including sovereignty over data, networks and decision-making systems that underpin modern defence.

C5ISRT is the connective tissue that links sensing to decisions, training to operations and capability development to sustainment. By integrating systems, people, data and environments under sovereign control, Canada can operate with confidence across domains, assure Arctic sovereignty and contribute meaningfully to allied defence.

Calian, a proud Canadian company, stands ready to serve as Canada's systems integrator of choice for C5ISRT, enabling mission success today and resilience for the future.

CALIAN®

Confidence. Engineered.

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 5,000 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.

calian.com | info@calian.com | 1.877.225.4264 |