

**ADGA**

# CASE STUDY

## Security Analysis & Roadmap

Ensuring safe and secure skies for CSA



# SECURITY ANALYSIS & ROADMAP

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## Customer Challenge

The Canadian Space Agency (CSA) is an independent federal agency responsible for managing all civil Canadian space-related activities. Additionally, it represents Canada on the global stage, engaging in partnerships with various international organizations and governments as well as industry and academic institutions.

Part of CSA's mandate is to operate the government-owned and operated RADARSAT Constellation Mission (RCM) that includes a fleet of three Earth observation satellites. Launched in 2019, RCM provides imagery for the purposes of maritime surveillance, disaster management and eco-system monitoring by Canadian government departments and civilian users.

The manner in which satellite imaging data is used and made available for public consumption has evolved over the past decade. While about five percent of the RCM's expected image volume will be classified for science data handling, the remaining 95 percent will be for unclassified use. Meanwhile, operator personnel must have secure access to manage the satellite operation and its performance using the same ground system.

This process requires a multi-level secure (MLS) architecture to support registered users who order and download classified and unclassified images and related data as well as technical personnel who operate the spacecraft.

## Approach

ADGA carried out a systematic analysis of RCM over a one-year period that included:

- A Statement of Sensitivity (SOS) to identify and categorize relevant assets as per their confidentiality, integrity and availability values based upon potential, and reasonably expected, injuries in the event of a compromise;
- Identification of deliberate threats, accidents and natural hazards that may negatively affect these assets, along with an analysis of the likelihood of occurrence and severity of impact;
- Assessment of current vulnerabilities, based on the evaluation of existing or proposed security measures and their adequacies; and
- Analysis of any residual risks for assets vulnerable to specific threats. In instances where an assessed residual risk met, or exceeded, the *Medium* level, ADGA provided recommendations to help CSA attain a target *Low* level.

## The comprehensive analysis included:

- The RCM subsystems at the Primary Control Facility in St-Hubert and the Backup Facility in Ottawa;
- The Northern Ground Terminal (NGT), and its links;
- RCM transponders that ensure RCM image quality;
- The Multi-Mission Collision Risk Assessment Management System (CRAMS) that provides space debris collision analysis for RCM and other missions;
- The Antenna Reservation System (ARS) that conducts antenna reservations at external facilities for RCM and other missions; and
- The interfaces/entry points (both classified and unclassified) to all external systems.

## Outcome

ADGA distilled its analysis into a comprehensive roadmap to provide CSA with a detailed snapshot of the threats it faces in all dimensions – IT, technical, non-technical, physical and personnel-related. This includes actionable recommendations on how CSA can minimize business risk and ensure the success of the RCM mission by revisiting its security practices/policies and key business processes.

These recommendations are critical to the prevention of RCM security failures including cyber-attacks, espionage, data thefts, mission redirections, and even potential corruption and loss of services that would require a costly satellite re-launch.

CSA now has the clarity to understand what it should and must do, and the consequences of delays or inaction. CSA's executive team can make frank and informed decisions on how best to proceed given its governance priorities, budget constraints, and its internal and external stakeholder relationships.



Founded in 1967, ADGA is a leading Canadian provider of technology solutions, consulting and professional services. Headquartered in Ottawa, with offices across Canada, we are a privately owned and operated company with over 800 technical consultants and subject matter experts delivering strategic insight, world-class capabilities and service excellence to clients within the following industries:

- Defence
- Education
- Energy & Utilities
- Health Care
- Media & Telecommunication
- Mining
- Public Safety
- Public Sector & Government
- Real Estate; and
- Transportation & Aviation

Our services are organised internally through industry-focused Business Services teams as well as capability-driven Consulting Practices, which ensures that clients benefit from robust service delivery frameworks as well as specialist technical knowledge and expertise.



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Presidia Security Consulting Inc. (Presidia) provides security, intelligence and investigation services with related marketing and communications strategies to support them. With extensive executive experience within the Canadian security and law enforcement communities, Presidia principals have led the development of strategic research and policy documents and have implemented innovative security solutions that are now cornerstones of key business processes. Our team members have developed best practices – both at home and abroad – to protect people, assets, operations and reputations.

## ADGA's CONVERGED SECURITY SOLUTIONS

ADGA's Converged Security Solutions offering is unparalleled in Canada, providing a combination of **ADGA** and **Presidia** capabilities to address your unique security challenges. These areas of expertise include Personnel Security, Cyber Security and Physical Security, all supported by a robust security program and enterprise risk management framework. This framework ensures a holistic approach to security and identifies risk relative to organizational objectives, producing cost-effective response strategies and tangible, validated results. This full-stack approach provides “one-stop shopping” for custom-made security solutions for both large and small organizations and delivers world-class security expertise and services – enriched by a global network of trusted industry partners – to government, corporate, private and non-profit organizations. Employing a discreet, confidential and consultative approach, we work closely with our clients to protect their people, information, assets, facilities and reputation in today's dynamic and complex threat and risk landscape.