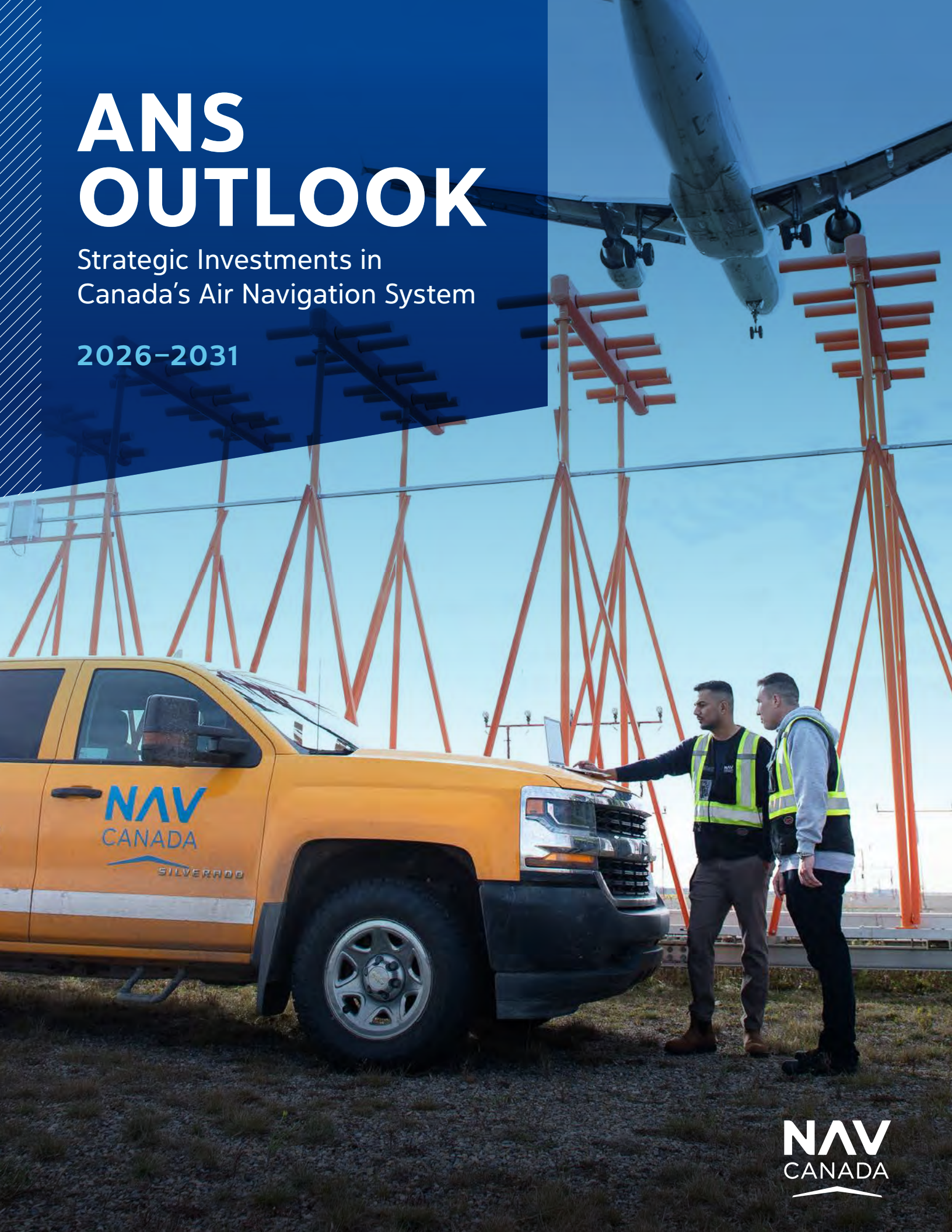
ANS OUTLOOK

Strategic Investments in Canada's Air Navigation System

2026–2031



NAV CANADA

CONTENTS

FOREWORD

Canadian aviation stands at an inflection point. A projected **60% increase in traffic by 2050** will test our capacity and infrastructure. Demographic changes are reshaping our workforce while international standards evolve through ICAO and initiatives like the CANSO Complete Air Traffic System (CATS) CONOPS for Future Skies. Customer expectations for efficiency and reliability remain high, and safety remains our top priority. With critical aviation infrastructure reaching obsolescence, we must invest now to ensure our capacity for the future.

What follows represents NAV CANADA's response over a five-year planning horizon: strategic investments that position Canadian aviation to manage growth, increase system predictability and resilience, integrate new entrants like remotely piloted aircraft systems (RPAS), and maintain world-class safety performance. Some initiatives transform how we manage airspace, while others ensure critical systems remain operational. Many of them will continue to evolve well beyond this planning horizon. All are essential to the aviation ecosystem we serve.

This document captures a specific window in our longer modernization journey – the near and medium-term work that delivers tangible benefits while setting the stage for our continued transformation beyond 2031.

These initiatives reflect the critical nature of our services and infrastructure. They will continue to be shaped through extensive engagement with customers, employees, unions, and key stakeholders. That collaboration reflects our commitment to the people who make NAV CANADA's mission possible every day. This document provides transparency into the broader scope of our modernization plans and the investments that will ensure safe, efficient service delivery for the future. As it unfolds over the coming years, implementation will aim to maximize operational benefits while minimizing disruption.

While global uncertainty requires flexibility in how we execute, I am confident in the plans outlined below and the significant benefits they will deliver for Canadian aviation. We look forward to your engagement and continued collaboration across the industry as we execute this work.

Mark Cooper
President and Chief Executive Officer

That collaboration reflects our commitment to the people who make NAV CANADA's mission possible every day."

INTRODUCTION

The ANS Outlook describes NAV CANADA's strategic initiatives and modernization programs aimed at renewing core infrastructure, meeting evolving customer requirements, and supporting the transformation of Canadian aviation. This document provides a detailed view of planned developments over the next five years to enable discussion and engagement among customers, employees, unions, and other stakeholders, with the goal of ensuring our investments deliver maximum benefit for the aviation community and Canadians.

Canada's air navigation system is more than aviation infrastructure. It is the foundation enabling commerce, connecting communities, and supporting economic activity across the second-largest country by area. It is also increasingly recognized as critical national infrastructure with growing strategic relevance, supporting military readiness, NORAD operations, Arctic sovereignty, and allied interoperability alongside daily commercial operations.

As NAV CANADA approaches the 30-year mark since privatization, the organization has invested more than $3.5 billion to modernize infrastructure and deploy advanced systems that enhance situational awareness and support safe, efficient operations. The investments described in this Outlook build on that foundation, continuing to modernize the systems that keep Canadian aviation safe and efficient while strengthening the shared infrastructure on which Canada's broader security interests depend.

Purpose and scope

The ANS Outlook describes NAV CANADA's operational programs and modernization initiatives planned for the 2026–2031 period. It provides visibility into anticipated work, generating discussion and engagement among customers, employees, unions, and other stakeholders to ensure our investments deliver maximum benefit for the aviation community.

Our people

NAV CANADA employees are the foundation of everything described in this document. The skilled professionals who manage Canadian airspace and associated critical infrastructure, including air traffic controllers, flight service specialists, technologists, engineers, and the diverse teams that support them, enable safe, efficient operations every day. Delivering on the initiatives in this Outlook depends on having the right people, in the right places, with the right training.

> ***"The investments described in this Outlook build on that foundation, continuing to modernize the systems that keep Canadian aviation safe and efficient while strengthening the shared infrastructure on which Canada's broader security interests depend."***

Like air navigation service providers globally, NAV CANADA has been managing workforce pressures following the pandemic, particularly due to training disruptions and the time required to qualify safety-critical personnel. Becoming a fully qualified air traffic controller or flight service specialist is a lengthy process due to the rigorous standards required in a safety-critical environment. We are making measurable progress on a comprehensive, multi-year strategy focused on recruitment, training, and retention, and supported by automation.

Since 2023, more than 600 air traffic service professionals have received their licenses and certifications, including more than 300 air traffic controllers, with close to 500 additional students in training across the country. In 2025 alone, we attracted 49,000 applicants, evaluated over 7,000 top candidates, and hired close to 500 students into our training programs, all records for the organization. Between 2025 and 2028, we expect approximately 1,500 students to enter NAV CANADA's training programs. Staffing growth exceeded attrition by 26% in 2024–2025.

This progress is backed by significant investment. NAV CANADA has committed more than $368 million over a four-year period to operational training and has launched a $40+ million multi-year simulation modernization program. It is also supported by partnerships with organizations such as CAE, which has expanded our training capacity by 500 additional students through 2028, and Micro Nav, whose advanced simulation platform will transform training delivery through AI-supported learning, improved simulator availability, and enhanced scenario development. Section 9 of this Outlook further details our learning strategy, including expanded simulation capabilities, a new learning management system, and data-driven approaches to training effectiveness.

Beyond training, we are investing in the tools, technologies, and operational improvements that make our workforce more effective. Many of the initiatives throughout this document, from trajectory-based operations that reduce controller workload, to digital aerodrome technology that transforms our workplace, to airspace changes that streamline operations, are designed not only to modernize the ATM system amidst increasing traffic, but to support the people who operate it.

NAV CANADA views its employees – across all professions – as the foundation of its operational excellence and organizational success, fostering a culture of collaboration, and shared safety-focus where employees are empowered to thrive both personally and professionally.

Dual-use infrastructure and national resilience

Canada's air navigation infrastructure is inherently dual-use: it supports daily commercial operations while enabling military readiness, sovereignty missions, NORAD operations, Arctic mobility, emergency response, and allied interoperability. As continental defence investment accelerates and the Royal Canadian Air Force expands its operational footprint, including large RPAS platforms operating alongside commercial traffic, the capabilities NAV CANADA builds and maintains are foundational to Canada's ability to monitor, access, and exercise sovereignty over its own airspace.

600+

ATS professionals licensed and certified since 2023

Attracted a record

49,000

applicants in 2025

1,500

students expected to enter training programs between 2025 and 2028

This strategic dimension is not confined to a single program. Enhanced surveillance coverage extending into northern and remote regions improves situational awareness for both civil and military operations. Modern communications platforms strengthen secure coordination with military users. Flexible Use Airspace concepts enable dynamic allocation between civil and military operations. Digital aerodrome technologies have the potential to extend service to remote airfields supporting both commercial connectivity and defence logistics. These dual-use benefits are woven throughout the initiatives described in this Outlook, and NAV CANADA is strengthening collaboration with Transport Canada, RCAF, NORAD, and international partners to ensure modernization efforts remain interoperable, scalable, and aligned with shared operational priorities.

Alignment with international standards

NAV CANADA's overall direction and vision for the future are guided by the International Civil Aviation Organization's Global Air Navigation Plan (GANP), Global Aviation Safety Plan (GASP) and Aviation System Block Upgrades (ASBUs) – the global framework for air navigation system modernization. This alignment ensures Canadian airspace remains interoperable with international partners and supports seamless operations across borders.

Many initiatives across this document reflect that alignment. Trajectory-Based Operations and the planned fiscal 2029 implementation of Flight and Flow Information for a Collaborative Environment (FF-ICE) support the trajectory-centric operations central to ICAO's vision for collaborative airspace management. Performance-Based Navigation route deployment, advanced surveillance capabilities and Collaborative Decision Making frameworks also align with internationally standardized operational concepts. This steady vision ensures Canadian investments contribute to the global aviation system's evolution while positioning NAV CANADA to benefit from international collaboration, shared operational standards and interoperable technologies.

Environmental benefits

Many of the initiatives in this outlook deliver meaningful environmental benefits alongside operational improvements. Trajectory-based operations, performance-based navigation routes, and enhanced arrival sequencing reduce fuel burn and emissions by enabling aircraft to follow optimized flight paths, minimizing holding patterns, and supporting continuous descent operations. Under Transport Canada's Aviation Climate Action Plan, these improved operations are identified as contributing up to a 4.4% reduction in overall Canadian aviation emissions by 2050, measured in millions of tonnes. NAV CANADA is also reducing the footprint of its own operations through facility energy upgrades, legacy navigation aid decommissioning, fleet optimization, and a net-zero by 2050 objective established under our Climate Action and Environment Strategy.

This alignment ensures Canadian airspace remains interoperable with international partners and supports seamless operations across borders."

Structure

The work ahead is organized across strategic and functional areas to maintain safety at the core:

1.	**Trajectory-Based Operations (TBO)**	Shifting from reactive traffic management to predictive, optimized flight paths that reduce fuel costs and delays
2.	**Digital Facilities (DAATS)**	Leveraging advanced technologies to improve service at airports and enhance staffing flexibility through a new hub model
3.	**RPAS Traffic Management (RTM)**	Creating the operational framework and technical standards to safely integrate remotely piloted aircraft into lower airspace
4.	**Communications**	Renewing our infrastructure and enabling enhanced data exchange
5.	**Navigation**	Replacing end-of-life navigation infrastructure to maintain backup capability independent of satellite systems
6.	**Surveillance**	Expanding coverage and redundancy while creating pathways to decommission aging radars
7.	**Aviation Weather**	Modernizing weather information systems to enable data-driven decision support and proactive traffic management
8.	**Aeronautical Information Management (AIM)**	Advancing the data and platforms that support our operation
9.	**Air Traffic Services Learning Strategy**	Scaling training capacity to address critical staffing requirements
10.	**Facilities and Infrastructure**	Ensuring backbone infrastructure is in place to support operations today and in the future

Timeframes

The content in each section is generally presented across two planning horizons, while specific timelines and phasing may vary by initiative:

- Short-term: 2026–2028
- Medium-term: 2029–2031

Collaboration and engagement

Our path forward has been developed alongside customers, stakeholders, unions, and employees. NAV CANADA will continue engaging collaboratively as programs evolve, ensuring implementation approaches maximize benefits while minimizing operational disruption. We remain committed to transparent communication throughout this period.

Planning context

The initiatives and timelines presented in this document reflect NAV CANADA's current plans. As with any multi-year modernization effort, implementation schedules and program scope may evolve in response to changing operational conditions, emerging technologies, regulatory developments, technical discoveries during implementation, geopolitical conditions or resource considerations. The document is intended to be representative rather than exhaustive, capturing a broad range of initiatives with the understanding that additional component, complementary and supporting projects are underway. Regular updates to the ANS Outlook will reflect these adjustments as programs progress.

Questions and comments

For comments or more information, please contact NAV CANADA Customer Service at service@navcanada.ca or 1-800-876-4693.

1 TRAJECTORY-BASED OPERATIONS (TBO)

OVERVIEW

Airspace and airport congestion result in significant costs to airlines through fuel burn and delays, with forecasted traffic growth expected to further strain the system. TBO is a global operational concept, endorsed by ICAO, designed to address these challenges by shifting air traffic management from reactive, tactical interventions to predictive coordination that permits optimization of flight paths in four dimensions, gate-to-gate. This will reduce fuel consumption, minimize delays, and improve schedule predictability for operators.

NAV CANADA is advancing the capabilities that will enable TBO and replace today's tactical decision-making interventions with strategic network-wide coordination. Instead of controllers managing aircraft through fixed airways and responding to constraints as they emerge, the system will enable trajectory coordination with operators and optimize use of airspace capacity. Data processing systems will provide enhanced network-wide situational awareness. Redesigned airspace will eliminate route structure inefficiencies. Collaborative decision-making ensures all stakeholders – airlines, airports, controllers – work from the same operational picture.

As a result, flights will follow optimal routes, reduce holding, and arrive predictably. Capable operators will reduce fuel costs, passengers experience fewer delays, as the system absorbs traffic growth and enhances safety with improved controller efficiency.

> ***Redesigned airspace eliminates route structure inefficiencies. Collaborative decision-making ensures all stakeholders—airlines, airports, controllers—work from the same operational picture."***

SHORT-TERM

We will establish the technological foundation by deploying a central Flight Data Processor (cFDP) based on the Interoperability Through European Collaboration (iTEC) ATM system, along with a national strategic airspace capacity management system (iACM). This connects data across all ATM systems, creating the unified operational picture required for strategic network-wide coordination.

The Canadian Network Management Unit (CNMU) is being developed with its operations centre in Ottawa, giving NAV CANADA the capability to balance demand and capacity across the entire national airspace system. Instead of individual facilities managing local constraints in isolation, the CNMU will coordinate strategic decisions with system users in a manner that optimizes the entire network. With this shift, collaborative decision-making (CDM) between NAV CANADA, airlines, and airport authorities will continue to be central to our approach, with data sharing and real-time coordination at its core.

We will integrate decision support tools co-developed with MIT Lincoln Laboratory, including predictive weather analysis systems for arrival, terminal and enroute airspace. These tools will help us strategically predict and mitigate weather impacts before they disrupt operations. Enhanced Time-Based Separation (eTBS) will optimize arrival capacity at major airports by allowing controllers to safely rely on actual wind and turbulence conditions rather than standard separations. Arrival Manager (AMAN) will continue optimizing arrival sequences at major airports while use of our Capacity Planning Tool (CPT) is expanded to the four major airports for optimized flight sequencing and runway utilization.

Airspace optimization initiatives will expand Performance-Based Navigation (PBN) route deployment and implement sequencing designs that support efficient arrival flows. To complement TBO enabling technologies, NAV CANADA will implement sequencing airspace designs to structure arrival flows into Vancouver and Calgary, enabling earlier and more predictable aircraft sequencing. By introducing upstream metering points and optimized flow corridors, this initiative will reduce tactical vectoring and holding, support continuous descent operations, improve fuel efficiency, and provide the structural foundation to translate strategic and tactical sequencing decisions into improved capacity, predictability, and controller efficiency.

The Digital Twin platform will deliver flight prediction models up to 168 days out, enabling controllers and flow managers to strategically anticipate constraints and coordinate responses with industry partners before they materialize.

MEDIUM-TERM

The iTEC SkyNex ATM system is also core to our TBO vision, designed to strengthen system integration, reduce costs, improve efficiency, and promote greener, more sustainable air travel. Our first implementation of the iTEC SkyNex ATM system is planned to go live at the Edmonton ACC, delivering critical next-generation ATM capabilities. National deployment planning will be informed by operational experience and refined procedures from the Edmonton implementation.

Flight and Flow Information for a Collaborative Environment (FF-ICE) implementation in fiscal 2029 will begin the transition from fragmented, message-based flight coordination to shared, trajectory-centric operations. FF-ICE allows richer, standardized flight information to be exchanged continuously across ANSPs, airlines, airports and military operators – ultimately supporting more accurate demand prediction, improved network planning and dynamic airspace management. This trajectory-sharing capability is foundational to TBO, enabling the system to predict conflicts and negotiate optimal flight paths hours in advance.

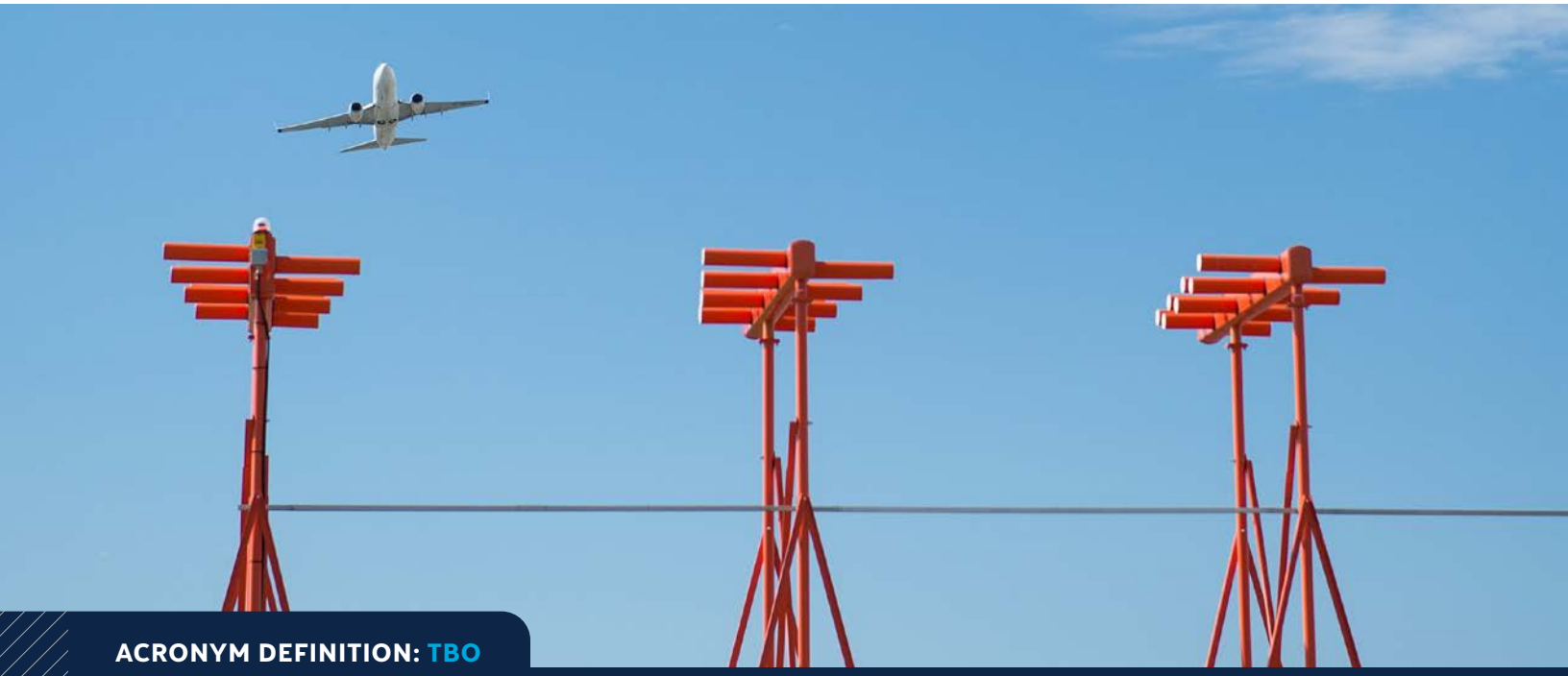
"The Digital Twin platform will deliver flight prediction models up to 168 days out, enabling controllers and flow managers to strategically anticipate constraints and coordinate responses with industry partners before problems materialize."

1 TRAJECTORY-BASED OPERATIONS (TBO)

The fully operational CNMU will integrate multiple functions – demand forecasting, capacity balancing, flow coordination – into unified network management, creating consistent, predictable service delivery for airlines operating across Canadian airspace. Decision support tools will coordinate the complete arrival and departure sequence, reducing the need for ground holds and airborne delays.

Evolving airspace design will enable Flexible Use Airspace (FUA) concepts for dynamic resource allocation based on real-time demand, while supporting the growing demands on our airspace from the Royal Canadian Air Force and NORAD. Free Route Airspace will provide improved flexibility in flight planning without fixed airway constraints. Digital Twin capabilities will integrate weather data and major airline schedule information for improved prediction accuracy, supporting optimized airspace design through modeling and simulation.

> ***Decision support tools will coordinate the complete arrival and departure sequence, reducing the need for ground holds and airborne delays.***



ACRONYM DEFINITION: TBO

ACEPT	Airport Capacity Evaluation and Prediction Tool
ACC	Area Control Centre
AMAN	Arrival Manager
ATM	Air Traffic Management
CAATS	Canadian Automated Air Traffic System
CAWS	Canadian Aviation Weather Systems
CDM	Collaborative Decision-Making
cFDP	Central Flight Data Processor
CNMU	Canadian Network Management Unit
CPT	Capacity Planning Tool (formerly Rate Planning Tool)
DMAN	Departure Manager
ECEPT	Enroute Capacity Evaluation and Prediction Tool
eTBS	Enhanced Time-Based Separation
FDP	Flight Data Processor
IFR	Instrument Flight Rules
iTEC	Interoperability Through European Collaboration
MIT	Massachusetts Institute of Technology
PBN	Performance Based Navigation
TBO	Trajectory-Based Operations
TCEPT	Terminal Capacity Evaluation and Prediction Tool
VFR	Visual Flight Rules

TBO TIMEFRAME

SHORT-TERM

MEDIUM-TERM

FISCAL 2026-31

- Implement sequencing airspace designs

FISCAL 2027

- Build CNMU operations centre in Ottawa

FISCAL 2029

- Develop and deploy cFDP and iACM to connect data across all CAATS implementations
- Enable Digital Twin capabilities:
  - Deliver national flight prediction model for IFR and VFR flights (1, 2, 3, 7, 14, 28, 84, and 168 days out)

- Flight and Flow Information for a Collaborative Environment (FF-ICE)
- Integrate MIT Weather Products (ACEPT, TCEPT, ECEPT, CAWS)
- Progressively implement CNMU functions into fully operational national network management

FISCAL 2030

- Construction of new operations room at Edmonton ACC
- Enable Flexible Use Airspace
- Progressively implement Free Route Airspace

FISCAL 2031

- First iTEC SkyNex implementation at Edmonton ACC

2 DIGITAL FACILITIES (DAATS)

OVERVIEW

With traditional airport tower infrastructure beginning to reach end-of-life across NAV CANADA's network, aging buildings will soon require costly repairs or replacement. At the same time, we will soon need a more adaptive approach to the way we deploy our workforce to meet tomorrow's air traffic demands. NAV CANADA is deploying Digital Aerodrome Air Traffic Services (DAATS) to address both challenges: replacing aging tower infrastructure with modern centralized facilities while addressing staffing constraints at our towers.

DAATS uses high-resolution cameras, external microphones, and digital displays to enable the provision of air traffic services from digital hubs. This replaces out-the-window visual operations with comprehensive sensor coverage to provide the enhanced situational awareness our operational employees need to do their jobs.

Increased standardization of technology, systems and procedures will support consistent service delivery and a streamlined training delivery while centralized infrastructure concentrates expertise to enhance operational resilience and replaces the need for lifecycle replacements and upgrades to our current traditional towers.

SHORT-TERM

Construction is completed for the Kingston Digital Facility (KDF), our first operational digital facility when Transport Canada concurrence is obtained. KDF will serve as the transitional facility where specialized procedures, emergency protocols, and operational standards addressing human factors requirements will be validated. This foundational work establishes performance standards and best practices guiding subsequent implementations, reducing risk and accelerating deployment timelines for future facilities.

This initial deployment phase will prove air traffic services can effectively manage situational awareness and workload through remote operations while maintaining safety performance. Technical infrastructure will integrate existing ATM and CNS systems, and proven sensor technologies to replicate – and in some cases improve on – the operational awareness available from traditional units. Structured testing and assessments will confirm the approach before committing to national deployment.

> ***DAATS uses high-resolution cameras, external microphones, and digital displays to enable the provision of air traffic services from digital hubs."***

KDF will provide on-site services for Kingston FSS and remote services for Hamilton Tower, validating technical solutions and operational procedures in a controlled environment before program expansion. The aeronautical study process for Hamilton Tower will begin in Spring 2026, ensuring regulatory compliance throughout the transition.

MEDIUM-TERM

Following validation of Kingston FSS and Hamilton Tower in the KDF, we will establish our first full-scale digital hub serving multiple airports across Ontario. This hub will demonstrate program scalability and provide the operational model for national expansion, while maintaining service quality and safety performance.

This digital hub will handle diverse operational requirements, delivering services across airports with varying traffic levels, weather conditions, and infrastructure characteristics. The experience will inform our approach to operational management and ATS workload optimization, enabling unit deployment that is not constrained by traditional FIR boundaries.

Our long-term implementation plan will establish five to six digital hubs strategically positioned across Canada, each serving up to 20 airports. This distributed network will optimize coverage while maintaining operational resilience, transforming the way NAV CANADA delivers airport services and creating enhanced career development pathways for ATS professionals.

"This digital hub will handle diverse operational requirements, delivering services across airports with varying traffic levels, weather conditions, and infrastructure characteristics."

ACRONYM DEFINITION: DAATS

ATM	Air Traffic Management
ATS	Air Traffic Services
CNS	Communications, Navigation and Surveillance
DAATS	Digital Aerodrome Air Traffic Services
FIR	Flight Information Region
FSS	Flight Service Station
KDF	Kingston Digital Facility
TC	Transport Canada

DAATS TIMEFRAME

SHORT-TERM

MEDIUM-TERM

FISCAL 2026

- Hamilton Tower aeronautical study begins

FISCAL 2027

- Validate technical solutions

FISCAL 2028

- Establish Kingston Digital Facility (KDF) with remote operations for Kingston FSS

FISCAL 2029

- Expand KDF remote operations for Hamilton Tower

FISCAL 2030

- Establish first digital hub to service Ontario airports beginning with site 3

3 RPAS TRAFFIC MANAGEMENT (RTM)

OVERVIEW

The drone industry projects exponential growth in commercial operations – package delivery, infrastructure inspection, emergency services – requiring flights beyond visual line-of-sight (BVLOS). A 2026 NAV CANADA study projects this sector will add up to $120 billion annually to Canada's economy by 2045, expanding from $2.4-$3.6 billion in 2024 and supporting growth from more than 30,000 jobs today to over 290,000 by 2045. We are developing the operational framework and technical standards to safely integrate remotely piloted aircraft systems into Canadian civil airspace while maintaining safety and efficiency for crewed aircraft.

This integration must accommodate the full spectrum: Advanced Air Mobility (AAM) aircraft carrying passengers in urban environments, large military RPAS under Instrument Flight Rules (IFR), and small commercial RPAS conducting BVLOS operations near airports. Each presents unique challenges – different performance characteristics, communication capabilities, and operational requirements. The system must coordinate all these aircraft types with traditional aviation through procedures and technologies that maintain safe separation.

Safe integration enables industry growth. This work will help companies deploy commercial RPAS operations that generate economic value, public safety agencies to conduct emergency response beyond visual range, and military operations to proceed without disrupting civil aviation. We are ensuring the broader aviation system maintains safety performance while accommodating these new entrants.

SHORT-TERM

Our NAV Drone app enables RPAS pilots to safely and legally request permission to fly a drone in airspace controlled by NAV CANADA. We are continuing to enhance the app's user experience and will align with evolving Transport Canada regulatory requirements for expanded RPAS operations. Concurrently, the RPAS Flight Information Management System (rFIMS) is under design as the next-generation traffic management system for BVLOS operations. rFIMS will provide automated flight planning, real-time conflict resolution, and conflict detection specifically for small RPAS operations beyond visual line-of-sight – capabilities the current system lacks.

> ***This work will help companies deploy commercial RPAS operations that generate economic value, public safety agencies to conduct emergency response beyond visual range, and military operations to proceed without disrupting civil aviation."***

Royal Canadian Air Force (RCAF) RPAS missions will initially operate in segregated airspace under IFR-equivalent flight rules. This implementation establishes operational protocols for large RPAS integration in controlled airspace with conventional aircraft, generating operational experience with high-performance RPAS systems while validating separation standards and air traffic control procedures. Military operations provide the foundation for eventual commercial large RPAS integration.

We will coordinate with major airports to develop standardized RPAS incident response plans aligned with Transport Canada guidance. Unauthorized RPAS activities near airports create safety risks and operational disruptions. These protocols will establish rapid response capabilities – detection technologies, communication procedures between airports and law enforcement, and coordination with air traffic control – while maintaining airport operational continuity.

MEDIUM-TERM

We will deploy our next-generation traffic management system to handle increased commercial traffic volumes and operational complexity. This system will coordinate multiple RPAS operations simultaneously alongside conventional aircraft traffic through existing air traffic control systems, supporting both automated and controller-managed operations based on airspace requirements.

Building on this expanded framework, the operational experience and safety protocols developed through military and small-scale commercial operations will enable BVLOS operations in controlled airspace. This capability expansion will deploy technologies such as detect-and-avoid systems, enhanced communications, and modified air traffic control procedures that accommodate RPAS operations alongside traditional aircraft while maintaining established safety separation standards.

"This system will coordinate multiple RPAS operations simultaneously alongside conventional aircraft traffic through existing air traffic control systems, supporting both automated and controller-managed operations based on airspace requirements."

ACRONYM DEFINITION: RPAS TRAFFIC MANAGEMENT (RTM)

ATC	Air Traffic Control
BVLOS	Beyond Visual Line of Sight
IFR	Instrument Flight Rules
RCAF	Royal Canadian Air Force
rFIMS	Remote Flight Information Management System
RPAS	Remotely Piloted Aircraft Systems
RTM	RPAS Traffic Management
TC	Transport Canada
VLOS	Visual Line of Sight

3 RPAS TRAFFIC MANAGEMENT (RTM)

SHORT-TERM

MEDIUM-TERM

FISCAL 2027

- Alignment with Major Airports on drone incident response plans

FISCAL 2028

- Enable RCAF RPAS safe integration under IFR
- NAV Drone update for new regulations, and design of next generation system for BVLOS (rFIMS)

FISCAL 2029

- Enable RCAF RPAS (CQ-9B) integration under IFR

FISCAL 2030

- Implementation of next-generation traffic management system

FISCAL 2032

- Enable BVLOS in controlled airspace

4 COMMUNICATIONS

OVERVIEW

Communication capabilities between pilots and air traffic services are essential for safe and efficient flight. NAV CANADA is modernizing our communications infrastructure to support current operations and enable future technological capabilities across the national airspace system. This modernization will replace critical end-of-life infrastructure, enable centralized communication systems, and enhance data exchange between aircraft and air traffic control.

We are working to replace aging copper-based telecommunications with fiber optic networks, deploy unified datalink systems that simplify aircraft connectivity, and implement next-generation voice communication systems designed for increased operational demands.

This systematic infrastructure renewal will ensure reliable, high-capacity communications while reducing operational complexity and supporting the integration of advanced air traffic management technologies. Customers will gain simplified connectivity and improved communication reliability, as controllers access modern systems with better capacity and redundancy.

SHORT-TERM

The telecommunications infrastructure upgrade program will address between five and ten airports annually, replacing copper cabling that has reached operational limits. Fiber optic networks provide the capacity foundation for all subsequent communications modernization, including the bandwidth required for Voice Communication Systems (VCS) and Voice over Internet Protocol (VoIP) enabled radio systems. Scope and complexity determine implementation schedules – larger airports with more complex infrastructure will require longer transitions.

Central Datalink Communication System (CDLCS) and Controller Pilot Data Link Communications-Departure Clearance (CPDLC-DCL), which streamline controller-pilot communication with text-based message exchange capability, will advance through centralized application development, with deployment planned for 2028. This eliminates the current multiple-login requirement – aircraft connect once for all Canadian airspace operations rather than requiring separate logins for oceanic,

> ***"Fiber optic networks provide the capacity foundation for all subsequent communications modernization, including the bandwidth required for Voice Communication Systems (VCS) and Voice over Internet Protocol (VoIP) enabled radio systems."***

enroute, and terminal airspace. This single-login approach is already operational at other ANSPs including the Federal Aviation Administration, providing operators with consistent procedures across North American airspace.

The VCS replacement program is in its development and testing phase. VCS encompasses main and backup voice systems plus third-party telecommunications infrastructure supporting increased bandwidth requirements. Following successful test site implementation, the first tower will come online in fiscal 2028, the first Flight Information Centre in fiscal 2029, and the first Area Control Centre in fiscal 2030. National rollouts will begin after validating these initial deployments. Alongside VCS deployment, VHF radio replacement will begin deployment, likely starting in fiscal 2028, to improve current analog operations while providing the foundation for future digital voice and data capabilities.

Learn more in NAV CANADA's Communication Navigation Surveillance/Air Traffic Management (CNS/ATM) Operations Plan.

MEDIUM-TERM

We will continue VCS deployment across operational facilities, providing modern, reliable voice communications with enhanced redundancy and capacity. This deployment will establish a sustainable communications platform for decades of future operations.

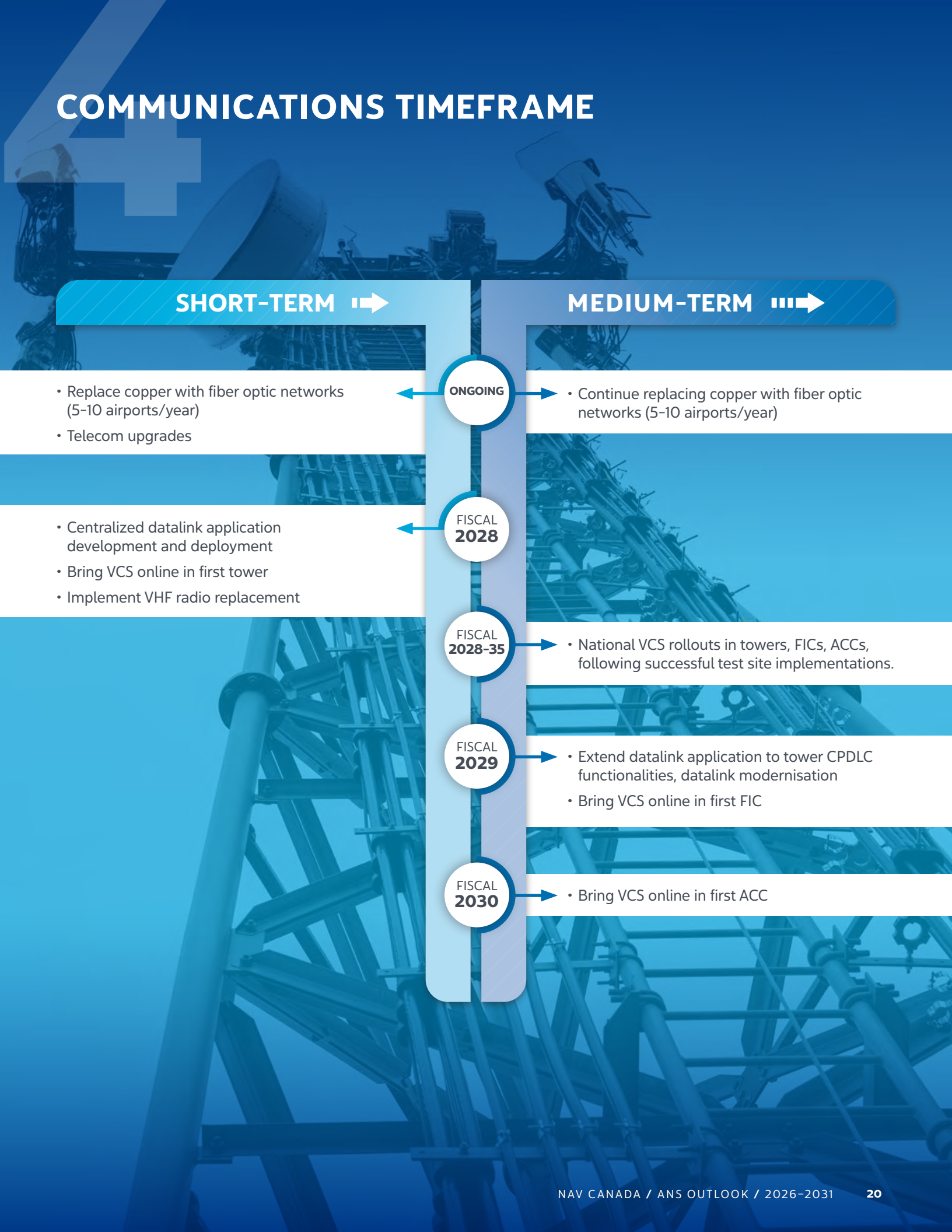
We will extend datalink capabilities to include tower CPDLC functionalities, expanding beyond initial departure clearance applications to encompass comprehensive air-ground data communications. This extension will reduce voice frequency congestion at busy airports, improve communication accuracy, and decrease pilot workload during taxi and departure phases.

Broader datalink modernization will enhance data exchange capabilities with aircraft systems, supporting advanced applications including trajectory sharing, real-time weather updates, and operational coordination messages. These enhanced datalink services will provide the communication foundation required for future air traffic management concepts while maintaining backward compatibility with current aircraft equipage levels.

ACRONYM DEFINITION: COMMUNICATIONS

ACC	Area Control Centre
CDLCS	Central Datalink Communication System
CPDLC-DCL	Controller Pilot Data Link Communications-Departure Clearance
FAA	Federal Aviation Administration
FIC	Flight Information Centre
VCS	Voice Communication System
VHF	Very High Frequency
VoIP	Voice over Internet Protocol

COMMUNICATIONS TIMEFRAME



SHORT-TERM

MEDIUM-TERM

ONGOING

- Replace copper with fiber optic networks (5–10 airports/year)
- Telecom upgrades

- Continue replacing copper with fiber optic networks (5–10 airports/year)

FISCAL 2028

- Centralized datalink application development and deployment
- Bring VCS online in first tower
- Implement VHF radio replacement

FISCAL 2028–35

- National VCS rollouts in towers, FICs, ACCs, following successful test site implementations.

FISCAL 2029

- Extend datalink application to tower CPDLC functionalities, datalink modernisation
- Bring VCS online in first FIC

FISCAL 2030

- Bring VCS online in first ACC

5 NAVIGATION

OVERVIEW

NAV CANADA's navigation strategy leverages Performance-Based Navigation (PBN) and Global Navigation Satellite System (GNSS) capabilities to enable efficient, flexible routing while maintaining ground-based navigation infrastructure as a resilient backup. PBN routes provide the primary navigation framework supporting modern operations. Ground-based infrastructure independent of GNSS ensures operational resilience should satellite systems experience unavailability, or position and timing degradation due to jamming and spoofing.

Several areas require update as infrastructure reaches end-of-life: the Very High Frequency Omnidirectional Range (VOR) program replaces 60 stations that provide magnetic bearing information to pilots; the Distance Measuring Equipment (DME) program replaces approximately 170 stations that measure distance to ground stations; the Category II/III Instrument Landing System (ILS) program replaces 11 systems that provide precision approach guidance, and replacement of our Runway Visual Range (RVR) equipment, which measures visibility distance along runways, will commence.

SHORT-TERM

The VOR program will continue at 5-7 installations per year towards a calendar year 2029 completion, with Distance Measuring Equipment (DME) replacements also supporting continued service where DMEs are coupled with VORs. Additional DMEs are also being commissioned near numerous airports that have Standard Terminal Arrival Route (STAR) procedures, to allow those procedures to be flown using DME/DME/Inertial (D/D/I) navigation as an alternative to GNSS.

To support improved testing and calibration of navigation signals at more than 130 airports across the country, NAV CANADA's flight inspection fleet is transitioning from two Bombardier CRJ-200s to new Beechcraft King Air 360ER aircraft. The King Air 360ER provides operational flexibility and offers reduced jet fuel consumption and CO_2 emissions, lower maintenance costs and readiness to support next-generation navigation services including RNP-AR and trajectory-

"Additional DMEs are also being commissioned near numerous airports that have Standard Terminal Arrival Route (STAR) procedures, to allow those procedures to be flown using DME/DME/Inertial (D/D/I) navigation as an alternative to GNSS."

based operations. The aircraft are currently in production, with the first delivery expected in fiscal 2026, with the second arriving in fiscal 2027.

MEDIUM-TERM

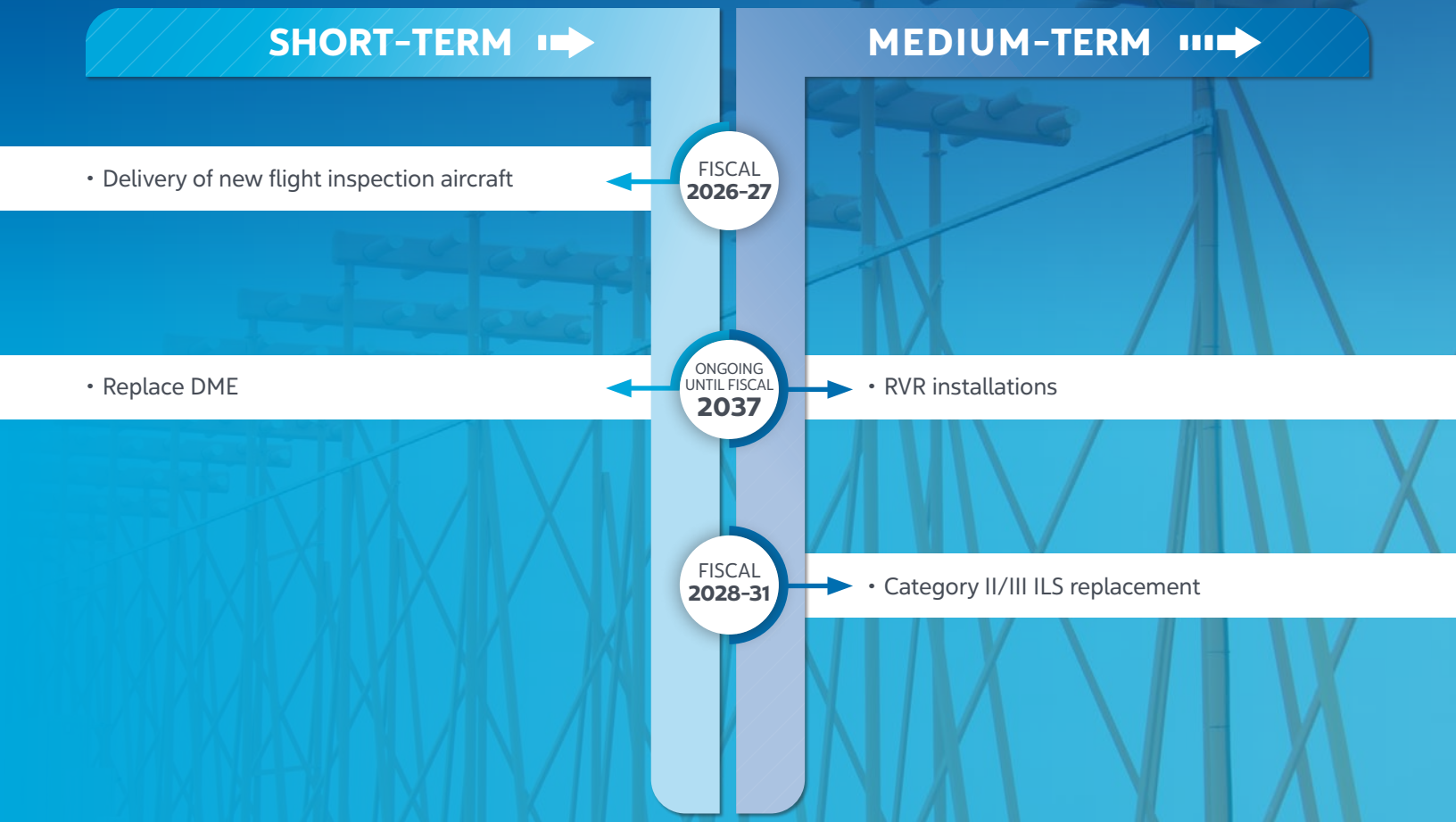
The VOR program will be completed by calendar year 2029. DME replacements are ongoing and will continue into the 2030s. RVR equipment replacement will continue across the network, maintaining reliable visibility reporting.

ILS equipment renewal will begin with Category II & III sites to support continuity of service. Category II and III ILS are selected first due to more stringent service availability requirements. NAV CANADA is supporting the introduction of Special Authorization Category II ILS at various airports across Canada.

ACRONYM DEFINITION: NAVIGATION

D/D/I	DME/DME/Inertial navigation
DME	Distance Measuring Equipment
GNSS	Global Navigation Satellite System
ILS	Instrument Landing System
PBN	Performance-Based Navigation
RVR	Runway Visual Range
STAR	Standard Terminal Arrival
VOR	Very High Frequency Omnidirectional Range

5 NAVIGATION TIMEFRAME



6 SURVEILLANCE

OVERVIEW

NAV CANADA is evolving surveillance infrastructure to expand coverage, improve redundancy, and create operational flexibility as traffic grows and new operational concepts emerge. Ground-based Automatic Dependent Surveillance–Broadcast (ADS-B) provides comprehensive coverage while supplementing radar operations, and leveraging data provided by the aircraft creating opportunities for NAV CANADA to strategically and efficiently retire aging systems. Multilateration (MLAT) systems are deployed as needed to fill coverage gaps in areas where radar is limited, such as mountainous terrain, offshore regions and airport surfaces. This layered approach maintains aircraft tracking capabilities while addressing equipment lifecycle transitions.

Strategic ADS-B placement near existing Secondary Surveillance Radar (SSR) locations creates layered surveillance, aiding backup coverage during maintenance and outages, improving operational flexibility. As ADS-B coverage matures, if validated by a level of service (LOS) study, we can pursue the strategic retirement of certain aging radar systems. Airlines benefit from maintained coverage enabling efficient routing. Controllers access reliable surveillance data with better redundancy.

With ADS-B Out equipage requirements already in place in Class A and B airspace, NAV CANADA is undertaking a national aeronautical study to assess a potential future expansion of this requirement to Class C, D, and E transponder-mandated airspace – a mandate already in place in the United States and many European countries. The study is evaluating anticipated benefits – including greater situational awareness, enhanced safety, and greater efficiency and predictability across our operation – while considering stakeholder equipage, technical feasibility, and economic impacts.

On the ground, a project to replace our Surface Movement Radars (SMRs) has recently started. This will account for the nine airports that currently have SMRs to aid in ground control when the weather results in reduced visibility operations.

> ***"As ADS-B coverage matures, we can pursue the strategic retirement of certain aging radar systems."***

SHORT-TERM

Phase 2 ground-based ADS-B implementation completes with 24 additional sites building on Phase 1 coverage, positioned primarily near existing SSR locations to improve area surveillance and facilitate SSR replacement. Multilateration systems are being deployed at locations like St. Hubert, where the lack of an ADS-B mandate and the line of sight of radar require a different solution, extending the network of 11 existing systems.

In addition, 74 legacy telecommunications circuits reaching end-of-support will undergo replacement with modern infrastructure meeting updated requirements and ensuring the highest possible uptime for critical systems.

Targeted modernization of ten SSR systems continues, building on three completed. Replacing electronics extends operational capability and builds a spare parts inventory to support remaining radars. This bridges the gap until replacement systems deploy while maintaining surveillance coverage across the network.

Work on the aeronautical study for a potential Class C/D/E ADS-B mandate, including stakeholder engagement, analysis, and a Notice of Proposal for potential outcomes and recommendations, is expected throughout 2026. Submission to Transport Canada will follow in 2027.

MEDIUM-TERM

Additional ground-based ADS-B deployments support the Class A/B ADS-B mandate, while overlapping SSR coverage deployment provides coverage at remaining radar sites. Additional ground-based ADS-B deployments will provide redundant surveillance in areas that have historically only had space based ADS-B, enhancing safety and efficiency in those areas.

Systematic SSR replacement begins in 2030 following level of service reviews to validate where SSR is required. Multilateration (MLAT) and Wide-Area Multilateration (WAM) refurbishment incorporates updated technologies while maintaining capabilities.

Depending on the outcome of the aeronautical study, any potential implementation of a Class C/D/E ADS-B mandate is subject to regulatory concurrence and stakeholder readiness.

In addition, 74 legacy telecommunications circuits reaching end-of-support will undergo replacement with modern infrastructure meeting updated requirements and ensuring the highest possible uptime for critical systems."

ACRONYM DEFINITION: SURVEILLANCE

ADS-B	Automatic Dependent Surveillance-Broadcast
ANSP	Air Navigation Service Provider
ATC	Air Traffic Control
MDS	Multistatic Dependent Surveillance
MLAT	Multilateration
SMR	Surface Movement Radar
SSR	Secondary Surveillance Radar
WAM	Wide Area Multilateration

6 SURVEILLANCE TIMEFRAME

SHORT-TERM

MEDIUM-TERM

- Install 24 additional GB-ADS-B sites (Phase 2)

ONGOING UNTIL 2032

- Continued Fusion support and enhancements of filtering and data processing.
- Conduct aeronautical study for a potential Class C/D/E ADS-B mandate

CALENDAR 2026

- Expand the use of MLAT in areas where Radar and ADS-B do not provide sufficient coverage

FISCAL 2027

- Submit aeronautical study to Transport Canada

CALENDAR 2027

- Continue with SSR modernization project

FISCAL 2028

2030 UNTIL 2036

- Complete 36 total ADS-B receiver deployment
- Planned MDS refurbishment as systems reach end of life

ONGOING FROM 2030

- Replace RADARs after Level of Service review

7 AVIATION WEATHER

OVERVIEW

Weather significantly impacts air traffic operations, affecting both capacity and flight efficiency. The quality, accessibility, and operational integration of weather information directly affect decision-making by ATS personnel and flow managers on how best to manage those impacts. NAV CANADA is modernizing weather systems to improve observation quality, enable data-driven decision support, and strengthen integration with air traffic management tools supporting trajectory-based operations, and strategic network-wide coordination.

Modernization focuses on producing reliable, high-quality data from our observation networks; transitioning that to machine-readable datasets; and embedding weather intelligence directly into operational decision-making. Our operations gain higher-quality, more timely information supporting proactive decisions, while operators benefit from improved trajectory predictability and reduced weather-related disruptions. This infrastructure also supports advanced capabilities including the weather prediction tools detailed in the TBO section of this report, which rely on high-quality weather data, and forecasts to evaluate impacts across airports, terminals, and enroute airspace.

SHORT-TERM

Surface weather observation network modernization will continue through deployment and upgrades of Automated Weather Observing Systems (AWOS) and weather cameras across the network, including northern and remote locations. Quality assurance, consistency, and oversight within the human observation program will be strengthened to increase overall observation quality, and reliability. Higher-quality, more consistent surface observations improve confidence in real-time aerodrome conditions, support safer operations, and provide stronger foundations for weather analyses, forecasts, and decision-support tools. New camera hardware will provide better low-light performance and extend the usable hours of the weather camera service.

> ***Our operations gain higher-quality, more timely information supporting proactive decisions, while operators benefit from improved trajectory predictability and reduced weather-related disruptions."***

This weather infrastructure modernization is complemented by the deployment of Automatic Terminal Information Service – Next Generation (ATIS-NG) which enables the delivery of timely, standardized airport and operational data – such as weather, runway configuration, and advisories – through both traditional voice broadcasts and digital, machine-readable formats.

The transition from forecast products to forecast datasets will advance as part of the broader evolution described in the Aeronautical Information Management (AIM) section of this report – emphasizing structured, machine-readable weather data that integrates into ATM systems while maintaining continuity for existing operations. Initial development of aircraft-derived weather information capabilities will advance, building on international practices to provide near-real-time winds, and temperatures in radar-sparse and remote regions. These data sources will be fused into operational wind profiles supporting ATS and ATFM decision-making, addressing data gaps in Northern Canada, and North Atlantic airspace.

MEDIUM-TERM

Surface observation network modernization will complete across priority locations, establishing a sustainable platform for high-quality weather observations. Quality assurance frameworks will be fully implemented, ensuring consistency, and reliability across automated and human observation programs. Aircraft-derived weather information capabilities will mature into operational services providing denser, timelier upper-air wind, and temperature information, improving situational awareness, trajectory predictability, and flow planning – particularly in data-sparse regions.

Weather information integration with ATM decision-making processes will strengthen, treating weather as a core operational input rather than standalone service. Consistency between weather information used by forecasters and ATS personnel will improve through integrated data systems, and coordinated workflows, supporting improved predictability, more efficient traffic flows, and reduced weather-related disruption as weather intelligence becomes fully embedded in operational decision-making.

"Aircraft-derived weather information capabilities will mature into operational services providing denser, timelier upper-air wind, and temperature information, improving situational awareness, trajectory predictability, and flow planning – particularly in data-sparse regions."

ACRONYM DEFINITION: AVIATION WEATHER

AWOS	Automated Weather Observing System
CIWS	Corridor Integrated Weather System
ACEPT	Airport Capacity Evaluation and Prediction Tool
TCEPT	Terminal Capacity Evaluation and Prediction Tool
ECEPT	Enroute Capacity Evaluation and Prediction Tool
MIT	Massachusetts Institute of Technology
TBO	Trajectory-Based Operations

AVIATION WEATHER TIMEFRAME

SHORT-TERM

MEDIUM-TERM

FISCAL 2027-29

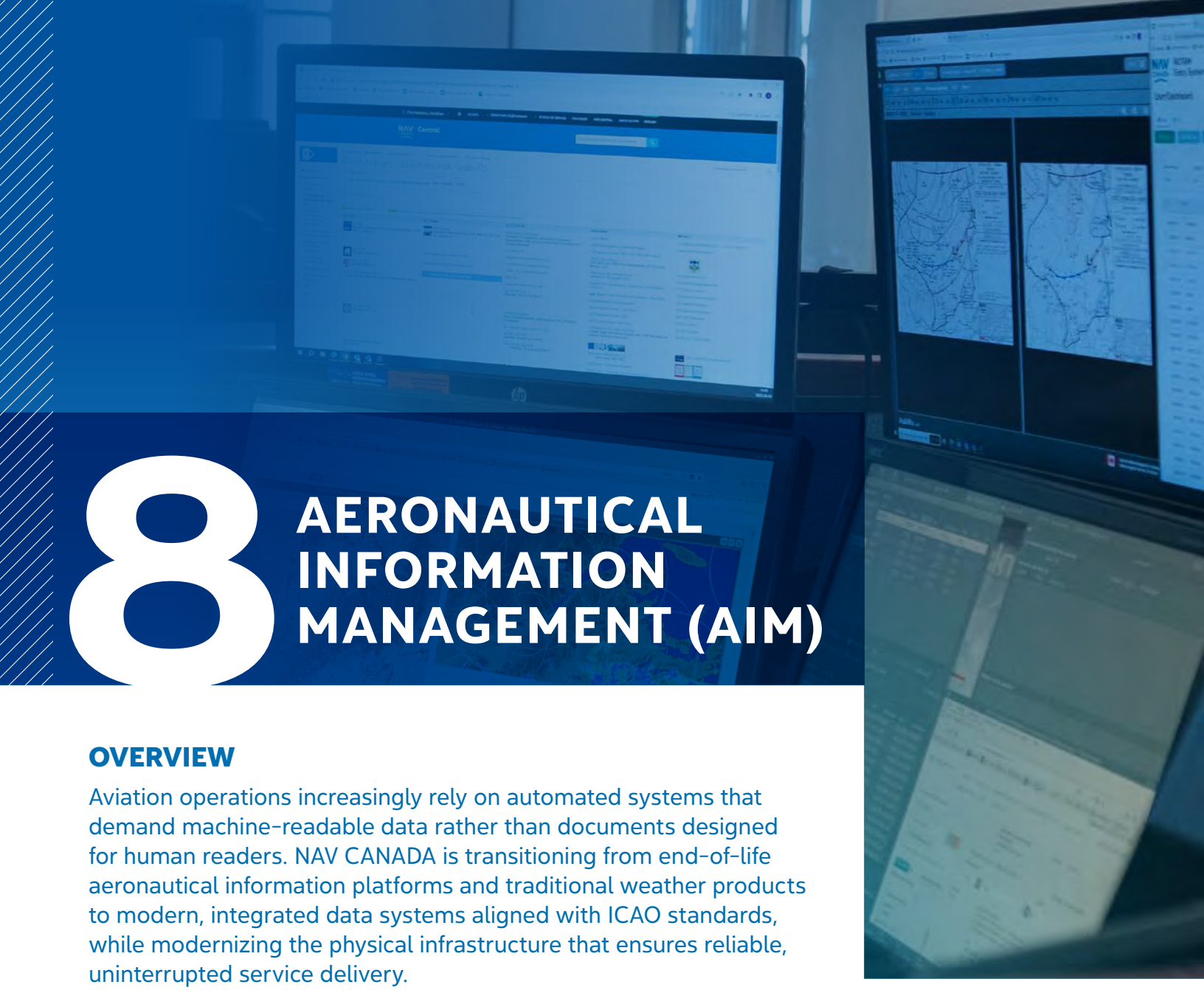
- AWOS & weather camera upgrades across the network

FISCAL 2027

- Strengthening human observation program
- Phased improvements to integration of weather in ATM decision-making
- Phased transition to forecast datasets
- Deployment of ATIS-NG

FISCAL 2028 (Q1)

- Phased transition to forecast datasets (continued)
- Phased introduction of aircraft-derived and enhanced weather information capabilities



8 AERONAUTICAL INFORMATION MANAGEMENT (AIM)

OVERVIEW

Aviation operations increasingly rely on automated systems that demand machine-readable data rather than documents designed for human readers. NAV CANADA is transitioning from end-of-life aeronautical information platforms and traditional weather products to modern, integrated data systems aligned with ICAO standards, while modernizing the physical infrastructure that ensures reliable, uninterrupted service delivery.

The Aeronautical Data Processing System (ADPS) will bring modern aeronautical data management capabilities supporting quality and traceability requirements. Physical infrastructure upgrades ensure the platforms delivering these digital services remain operational without interruption.

SHORT-TERM

ADPS implementation will replace the legacy platform while introducing new capabilities to produce aeronautical information in AIXM 5.1+ format. Building on this infrastructure, (Electronic Aeronautical Information Publication) eAIP will enter production and replace AIP Canada with a data-driven format providing real-time updates and standardized formats that automated flight planning systems can consume directly. Aeronautical Information Regulation and Control (AIRAC) will transition to ICAO AIP Amendment format, keeping Canadian aeronautical information aligned with international standards.

> ***Physical infrastructure upgrades ensure the platforms delivering these digital services remain operational without interruption."***

MEDIUM-TERM

ADPS capabilities will scale to manage the full scope of aeronautical information across operations. A critical expansion: implementing data originator capabilities through an exchange portal allowing airports and other sources to submit information digitally. This digital chain from origination to publication improves accuracy and timeliness while eliminating manual processing – changes flow directly into publication systems rather than requiring human intermediaries.

The eAIP system matures into the comprehensive source for Canadian aeronautical data as additional content migrates to the platform and AIRAC AIP Amendments integrate directly. Legacy publications phase out – operators access one system rather than multiple publications. The complete AIXM 5.1 data stream enables improved product offerings through standardized, interoperable formats.

ACRONYM DEFINITION: AIM

ADPS	Aeronautical Data Processing System
AIP	Aeronautical Information Publication
AIRAC	Aeronautical Information Regulation and Control
AIXM	Aeronautical Information Exchange Model
eAIP	Electronic Aeronautical Information Publication
ICAO	International Civil Aviation Organization

8 AERONAUTICAL INFORMATION MANAGEMENT (AIM)

SHORT-TERM

- Implement Aeronautical Data Processing System (ADPS)
- Introduce AIXM 5.1+ format capabilities

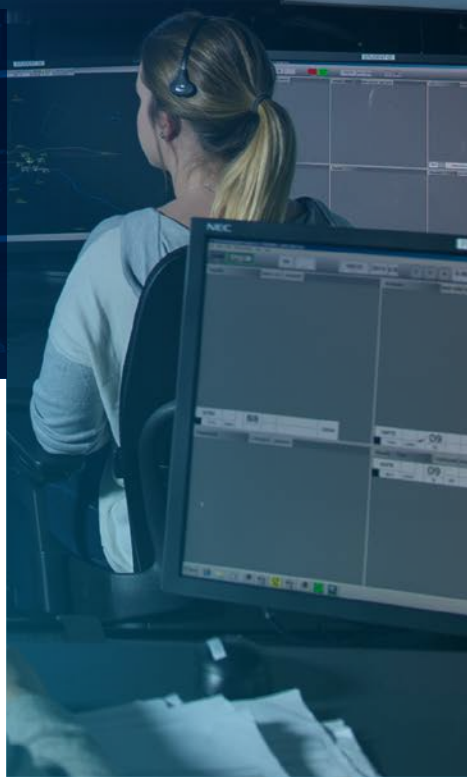
FISCAL **2027** (Q3)

FISCAL **2028** (Q4)

MEDIUM-TERM

- Scale ADPS to manage full scope of aeronautical information
- Complete AIXM 5.1 data stream implementation

9 AIR TRAFFIC SERVICES (ATS) LEARNING STRATEGY



OVERVIEW

NAV CANADA's people are our greatest asset – the skilled professionals managing Canadian airspace enable safe, efficient operations daily. Our learning strategy invests in their development while addressing critical staffing requirements driven by air traffic services (ATS) workforce attrition. Retirements are accelerating while ATS training timelines remain unchanged, requiring intervention to avoid service restrictions at facilities across the country. The learning strategy addresses this through expanded training capacity, modernized simulation technologies, and data-driven learning management systems that improve training effectiveness, and operational readiness.

Our partnership with CAE complements our robust internal capacity for basic training from 959 ab initio students to 1,427 for the fiscal years 2025-28, the pipeline required to maintain staffing in the coming years. We are also investing in modern simulation platforms, including the Micro Nav BEST platform selected in 2026. This will provide capabilities that transform training delivery, such as AI-enabled speech recognition, 3D visualization, training scenario and data creation, and connectivity with our operational systems through training and validation. Meanwhile a new learning management system (LMS) will optimize delivery and enable adaptive learning approaches. Together, these improvements ensure adequate staffing levels supporting the long-term stability of Canadian aviation operations.

SHORT-TERM

The CAE partnership expansion addresses staffing needs while maintaining training quality aligned with operational requirements. While training is a national focus, additional regional staffing initiatives will add tower controller students (VFR rating) specifically for Vancouver and Edmonton Flight Information Regions, targeting operational demands in these high-growth areas where increased capacity is essential.

> ***We are also investing in modern simulation platforms, including the Micro Nav BEST platform selected in 2026."***

Simulation modernization will advance through simulator hardware validation, software configuration testing, and operational validation. A complex tower simulator in Vancouver – on track for first course delivery in fiscal 2027 – will support ab-initio student training by replicating complex operational conditions. This allows students to encounter challenging scenarios in simulation rather than managing live traffic, directly mitigating operational risk while building competency.

LMS selection and implementation will centralize all courseware, providing learners with continuous access to training materials across multiple platforms. The system will track learner progress, performance, and compliance requirements while offering instructors real-time insights into student development. Automated processes for courseware updates and publishing will reduce administrative overhead, allowing instructors to focus on direct student instruction rather than materials management.

"Automated processes for courseware updates and publishing will reduce administrative overhead, allowing instructors to focus on direct student instruction rather than materials management."

MEDIUM-TERM

Data analytics will optimize training capacity by aligning resource allocation and specialty distributions with operational forecasts for fiscal year 2028 and beyond. This ensures facilities receive appropriately trained employees when needed, with training resources deploying efficiently across specialties experiencing highest demand rather than relying solely on historical patterns.

Simulation capabilities will incorporate updated software supporting flexible, on-demand learning models. Data collection systems integrated within simulation platforms will identify specific learning patterns and optimize training scenarios based on performance data, providing detailed analytics for continuous improvement. These technological improvements expand training accessibility while maintaining the high-fidelity operational experience required for effective skill development.

LMS capabilities will leverage data to create student personas that support adaptive learning approaches. The system tailors training modules to individual aptitudes and performance, enabling targeted interventions for struggling students and accelerated pathways for high performers. This data-driven approach supports continuous refinement of training methodologies based on measurable learning outcomes and operational performance metrics.

ACRONYM DEFINITION: ATS

ATS	Air Traffic Services
CAE	CAE Inc. (training partner)
FIR	Flight Information Region
LMS	Learning Management System
VFR	Visual Flight Rules

AIR TRAFFIC SERVICES (ATS) LEARNING STRATEGY

SHORT-TERM

MEDIUM-TERM

FISCAL 2026 (Q2)
- Commission Vancouver simulator

FISCAL 2026 (Q4)
- Deploy tower course for Ab-initio students

FISCAL 2027
- Implement LMS solution
- Incorporate machine learning algorithms in LMS

FISCAL 2027+
- Automate manual processes such as courseware updates and publishing through development of the LMS
- Update simulation software for enhanced on-demand learning

FISCAL 2028+
- Create personalized learning paths based on performance data

FISCAL 2029+
- Enable targeted interventions and accelerated pathways

10 FACILITIES AND INFRASTRUCTURE

OVERVIEW

NAV CANADA operates out of over 100 staffed facilities and 1,400 equipment locations across the country. The modernization programs detailed throughout this document – from trajectory-based operations to digital training platforms – depend on reliable, resilient foundational infrastructure. NAV CANADA is strengthening the underlying systems enabling service delivery to enhance the reliability and sustainability of our operations as we enter a period of significant change, ensuring the foundations supporting advanced capabilities remain operationally sound.

SHORT-TERM

Construction of the new Victoria control tower – which broke ground in May 2024 – will be completed in 2027, replacing the 1958-era facility with a modern, six-storey structure featuring 360-degree airfield visibility, and updated air traffic electronics. As NAV CANADA's first LEED-certified facility, it demonstrates commitment to sustainable infrastructure.

We are also upgrading our existing facilities. Dual redundant power systems installation will complete at all seven Area Control Centres, with final implementations at Winnipeg, and Vancouver, mitigating single points of failure, and ensuring uninterrupted service delivery. IT wireless network infrastructure will be redesigned and upgraded across all sites by August 2027, reducing maintenance requirements and support costs while increasing network availability.

Fibre optic upgrades will advance across 231 remote communication sites throughout the country – including challenging locations such as mountain tops, arctic tundra, and rural areas – to support modern voice, and data systems. While 70 sites have been upgraded through other projects, 162 require fibre optic cable installation. Construction restrictions to May–October limit annual capacity, with sites upgrading on a rolling basis.

"While 70 sites have been upgraded through other projects, 162 require fibre optic cable installation. Construction restrictions to May–October limit annual capacity, with sites upgrading on a rolling basis."

MEDIUM-TERM

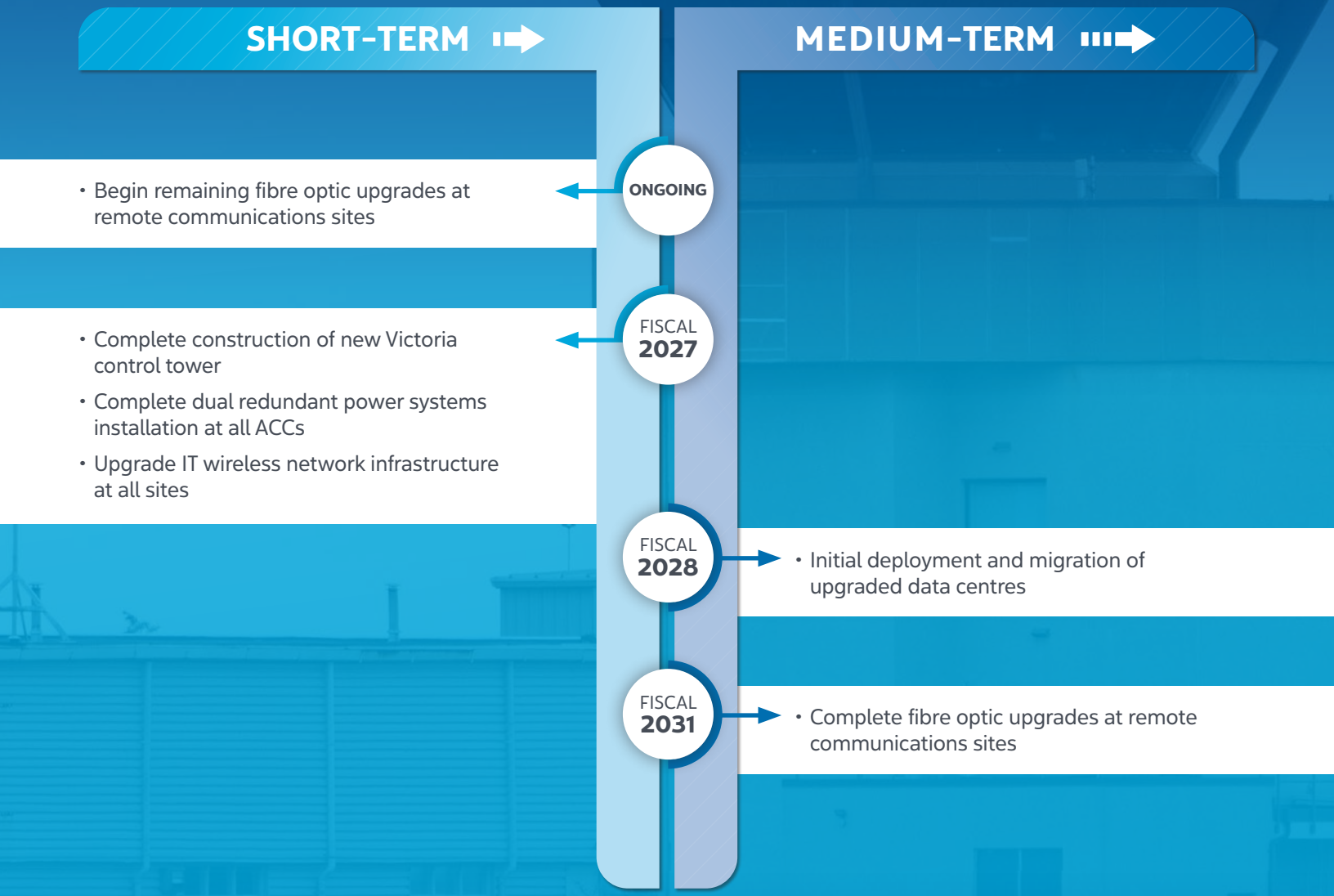
Three central data centres will be established to house NAV CANADA's technology systems nationwide, consolidating infrastructure currently distributed across multiple locations. These interconnected facilities provide increased data protection, enhanced security, and improved disaster recovery capabilities while replacing aging equipment with modern infrastructure. Initial deployment and migration will complete by fiscal 2028.

Fibre optic upgrades will continue on a rolling basis through fiscal 2031, completing infrastructure improvements across all remaining remote communication sites. This ensures comprehensive bandwidth capacity supporting VCS and future operational requirements across NAV CANADA's geographically distributed network.

ACRONYM DEFINITION: FACILITIES AND INFRASTRUCTURE

ACC	Area Control Centre
ATM	Air Traffic Management
IT	Information Technology
LEED	Leadership in Energy and Environmental Design
VCS	Voice Communication Systems

10 FACILITIES AND INFRASTRUCTURE



CONCLUSION

The initiatives detailed in this ANS Outlook represent NAV CANADA's response to the converging challenges facing Canadian aviation: accommodating significant traffic growth, integrating new entrants like RPAS into controlled airspace, and modernizing infrastructure reaching end-of-life. Over the next five years, we expect that these programs will position the national airspace system to absorb demand while maintaining the safety, and efficiency our customers and stakeholders expect.

As these capabilities mature beyond this planning horizon, the operational and economic benefits will compound. Trajectory-based operations are expected to reduce excess terminal arrival flying time, while advanced airspace design concepts like Free Route Airspace and Flexible Use Airspace will significantly improve horizontal flight efficiency – shortening flight times and decreasing fuel consumption. Digital facilities will improve service resilience and staffing efficiency while, over time, avoiding significant expenditures related to the construction and maintenance of facilities. Automated RPAS flight management systems will safely and sustainably accommodate rapid growth in Canadian RPAS traffic – 5.1 million annual operations are projected by 2040 – with 75-80% managed automatically. What we are building today lays the groundwork for all of these important leaps forward.

These initiatives serve a purpose larger than operational efficiency. Canada's air navigation system is critical national infrastructure – the foundation enabling commerce, connecting communities, and supporting economic activity across the second-largest country by area. The investments detailed here are necessary steps towards the infrastructure that will power Canada's economy over the next fifty years, positioning the national airspace system to accommodate emerging technologies, adapt to changing operational requirements, and support the growth, and competitiveness of Canadian aviation in an evolving global landscape.

Realizing these benefits requires partnership. Data-sharing with customers is critical to measuring outcomes, refining approaches, and ensuring investments deliver the value stakeholders expect. The collaboration that brought us to this point doesn't end with the publication of this document. We are committed to updating the ANS Outlook based on stakeholder feedback, emerging operational requirements, and evolving industry conditions. Your input shapes how these initiatives develop and ensures our investments deliver maximum benefit for the aviation community.

> ***We are committed to updating the ANS Outlook based on stakeholder feedback, emerging operational requirements, and evolving industry conditions."***

We welcome your feedback on the ANS Outlook.

Share your comments, questions, or suggestions through our stakeholder input form: **bit.ly/ANSOutlookFeedback**

For general inquiries about the ANS Outlook, contact NAV CANADA Customer Service at: service@navcanada.ca or 1-800-876-4693.

NAV CANADA