

SATELLITES. SERVING CANADA.

10 WAYS SATELLITE SERVICES CONNECT, PROTECT AND POWER OUR NATION

From the Arctic to our coasts, from rural communities to global markets—satellite services help Canadians stay connected, informed and safe while driving innovation and economic growth.

10 KEY WAYS SATELLITE SERVICES ARE USED IN CANADA

1



KEEPING CANADIANS CONNECTED ACROSS VAST DISTANCES

Bringing broadband, voice, TV and data to rural, remote and northern communities.

2



SUPPORTING ARCTIC SOVEREIGNTY AND SECURITY

Enabling communications, surveillance, environmental monitoring and situational awareness in the Arctic.

3



SUPPORTING CANADIAN AGRICULTURE

Using satellite data to monitor crops, soil, moisture and yields for smarter farming and land management.

4



MONITORING WILDFIRES AND NATURAL DISASTERS

Detecting fires, tracking smoke, monitoring floods and supporting emergency response and recovery.

5



PROTECTING OCEANS, COASTS AND FISHERIES

Monitoring vessels, sea ice, illegal fishing and pollution to protect marine resources and our coastlines.

6



SUPPORTING AVIATION AND TRANSPORTATION

Improving navigation, weather, communications and logistics for safer, more efficient transportation.

7



MONITORING CLIMATE AND THE ENVIRONMENT

Tracking glaciers, forests, permafrost, water and ecosystems to understand and protect our planet.

8



POWERING EVERYDAY LIFE WITH SATELLITE NAVIGATION

Enabling GPS for smartphones, banking, surveying, agriculture, emergency services and critical infrastructure.

9



SUPPORTING ARMED FORCES AND NATIONAL SECURITY

Providing communications, navigation, observation and intelligence support to keep Canada safe.

10



POWERING CANADA'S MODERN ECONOMY

Supporting key industries, government services, research and innovation across the country.



CONNECTING PEOPLE

Bridging distances and building stronger communities.



PROTECTING WHAT MATTERS

Enhancing safety, security and environmental stewardship.



POWERING PROGRESS

Enabling innovation, supporting industries and driving growth.



SATELLITE SERVICES ARE ESSENTIAL TO CANADA'S PRESENT AND FUTURE.  REACHING HIGHER. CONNECTING FARTHER. TOGETHER.

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HOW SATELLITES KEEP CANADIANS CONNECTED ACROSS VAST DISTANCES

BRIDGING DISTANCE. CONNECTING COMMUNITIES. STRENGTHENING CANADA.



AT A GLANCE

Across Canada's vast and rugged landscape, satellites deliver the communications that keep people connected. From the Arctic to remote coastlines and rural towns, satellite technology provides reliable access to internet, phone, TV, and critical data when ground networks can't reach.



NATIONWIDE REACH

Connects communities where other networks can't go.



RELIABLE AND RESILIENT

Works in all weather and supports communications when it matters most.



INCLUSIVE CONNECTIVITY

Supports Indigenous, rural, and remote communities with essential services.



STRONGER TOGETHER

Empowers communities, strengthens the economy, and enhances safety.

WHY DISTANCE MATTERS IN CANADA



Vast Geography: Canada is one of the world's largest countries with immense distances between communities.



Low Population Density: Many communities are small and widely spaced, making traditional infrastructure costly.



Challenging Terrain & Climate: Mountains, forests, waterways, and severe weather make building and maintaining ground networks difficult.

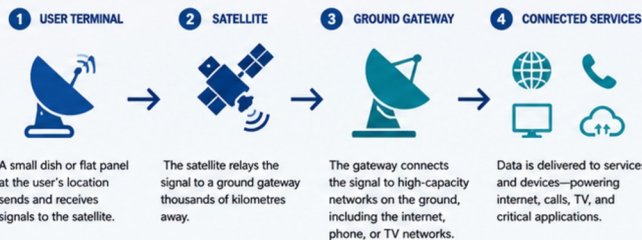


Limited Ground Infrastructure: Fibre and cellular networks are not always available or practical in remote areas.

URBAN NETWORKS VS. REMOTE REGIONS

ASPECT	URBAN NETWORKS	REMOTE & NORTHERN REGIONS
 INFRASTRUCTURE	Fibre, cable, and dense cell towers	Limited fibre, sparse towers, or none at all
 COVERAGE	High capacity and wide coverage	Gaps in service; hard to reach or very costly
 COST TO DEPLOY	Lower cost per user	Significantly higher cost per user
 RELIABILITY	Generally reliable with redundant networks	Vulnerable to outages; satellite adds resiliency
 SCALABILITY	Easier to expand	Satellite scales quickly across large areas

HOW SATELLITE COMMUNICATION WORKS



SATELLITES POWER THE SERVICES CANADIANS RELY ON



BROADBAND INTERNET

High-speed internet for homes, schools, businesses, and communities—enabling work, learning, and staying connected.



TELEHEALTH SUPPORT

Virtual consultations, remote monitoring, and health information access for communities far from medical centres.



EDUCATION ACCESS

Online learning, digital resources, and teacher support that open doors to opportunity for students everywhere.



EMERGENCY COMMUNICATIONS

Reliable communications for public safety, disaster response, and community alerts—especially during crises.



BROADCASTING & MEDIA

Television, radio, and cultural programming that inform, entertain, and preserve languages and traditions.

THE BENEFITS OF SATELLITE CONNECTIVITY



EQUAL ACCESS

Brings essential services to every community, no matter how remote.



RESILIENCY

Provides backup when terrestrial networks fail due to outages or disasters.



ECONOMIC GROWTH

Enables businesses, innovation, and investment in rural and northern regions.



SOCIAL CONNECTION

Keeps families, friends, and communities connected across long distances.



NATIONAL STRENGTH

Supports sovereignty, security, and Canada's ability to connect all its people.

IMPORTANT TAKEAWAYS

- ✓ Satellites reach where other networks can't.
- ✓ They deliver reliable internet, phone, TV, and critical data.
- ✓ They support health, education, safety, and economic opportunity.
- ✓ They help build a more connected, inclusive, and resilient Canada.
- ✓ When we connect communities, we strengthen the entire country.



FROM COAST TO COAST TO COAST, SATELLITES HELP KEEP CANADIANS CONNECTED—NO MATTER THE DISTANCE.

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HOW SATELLITES SUPPORT CANADA'S ARCTIC SOVEREIGNTY AND SECURITY

ENABLING AWARENESS, CONNECTIVITY, AND RESPONSE ACROSS THE NORTH



MISSION SNAPSHOT



Satellites extend Canada's reach across the Arctic—connecting people, monitoring vast and remote areas, and delivering critical information that supports decision-making, protects communities, and upholds Canada's sovereignty and security.



WHY THE ARCTIC IS CHALLENGING



Vast distances and extreme conditions limit on-the-ground infrastructure and line-of-sight communications.



Long periods of darkness, ice cover, and harsh weather constrain operations.



Dynamic sea ice and remote waters are difficult to monitor and access.



Traditional systems have gaps in coverage and capacity.



SATELLITE SERVICES THAT SUPPORT ARCTIC OPERATIONS



COMMUNICATIONS

Reliable voice, data, and broadband for communities, ships, aircraft, and northern operations where other networks don't reach.



EARTH OBSERVATION

High-resolution imagery and data reveal activity on land and water to support surveillance, planning, and decision-making.



SEA-ICE OBSERVATION

Monitors ice extent, thickness, and movement to inform safe navigation, resource stewardship, and infrastructure protection.



MARITIME AWARENESS

Tracks vessel activity and detects off vessels to enhance domain awareness and support sovereignty enforcement.



AVIATION & WEATHER SUPPORT

Provides weather forecasts, wind profiles, and aviation products to improve safety and operational efficiency.



EMERGENCY RESPONSE & SEARCH AND RESCUE

Enables distress alerting, location, communication, and coordination when every minute counts.

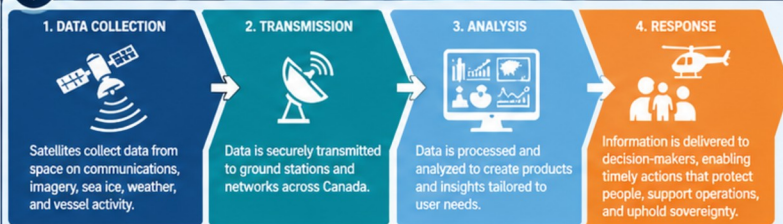


OPERATIONAL BENEFITS ACROSS CANADA

BENEFIT AREA	COMMUNITIES	GOVERNMENT & SECURITY	TRANSPORTATION
SAFETY & SECURITY	Faster alerts, reliable communications, and support during emergencies.	Enhanced domain awareness, surveillance, and search and rescue capability.	Safer navigation for ships and aircraft through situational awareness and weather information.
SITUATIONAL AWARENESS	Information on weather, ice, and hazards to support daily decisions.	Real-time insights on activities and conditions across the Arctic.	Up-to-date data on routes, ice conditions, and vessel traffic.
EFFICIENCY & RESILIENCE	Supports delivery of services, education, and economic opportunities.	Informs planning, infrastructure development, and resource stewardship.	Optimized routing and reduced delays through accurate weather and ice data.
SOVEREIGNTY & PRESENCE	Strengthens connection and confidence in Canada's presence.	Supports assertion of sovereignty and enforcement of Canadian laws and policies.	Enables monitoring of northern corridors and responsible use of Arctic waters.



HOW SATELLITE INFORMATION DELIVERS ACTIONABLE INTELLIGENCE



KEY TAKEAWAYS



Satellites close the distance gap, connecting people and operations across the Canadian Arctic.



They provide the persistent awareness needed to understand and manage a dynamic environment.



They strengthen Canada's sovereignty by enabling presence, enforcement, and responsible stewardship.



They enhance safety, support communities, and enable resilient northern economies.



They are an essential enabler of Canada's security today and into the future.

HOW SATELLITE IMAGERY SUPPORTS CANADIAN AGRICULTURE

BETTER INFORMATION. SMARTER DECISIONS. STRONGER FARMS.



OVERVIEW

Satellites provide timely, wide-area views of Canada's farmland, helping producers make informed decisions, reduce risk, and use resources wisely throughout the growing season.



WHAT SATELLITES OBSERVE

VEGETATION HEALTH



Plant vigor and photosynthesis indicators

SOIL MOISTURE



Surface soil wetness and moisture trends

LAND SURFACE TEMP.



Surface temperature patterns

CROP DEVELOPMENT



Growth stages and phenology progress

CLOUD COVER



Affects radiation and field conditions

LAND COVER & CHANGE



Cropland extent and land use changes

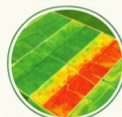
THE FARM DECISION CYCLE



TRADITIONAL FIELD SCOUTING VS. SATELLITE-ASSISTED MONITORING

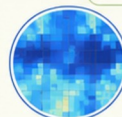
ASPECT	TRADITIONAL FIELD SCOUTING	SATELLITE-ASSISTED MONITORING
COVERAGE	Limited area, typically a small portion of fields	Large-area, consistent coverage across all fields
FREQUENCY	Infrequent due to time and resource constraints	Frequent updates throughout the growing season
INSIGHTS	Point observations; may miss variable conditions	Field-scale patterns; detect stress early across entire fields
WEATHER IMPACT	Access can be limited by weather and soil conditions	Observations possible even when fields are not accessible
COST & EFFICIENCY	Labour-intensive and time-consuming	More efficient; supports timely decisions and resource savings

WAYS SATELLITES HELP ON THE FARM



CROP HEALTH MONITORING

Identify healthy and stressed areas early to guide scouting, nutrient management, and timely interventions.



IRRIGATION PLANNING

Monitor soil moisture trends to schedule irrigation, conserve water, and improve efficiency.



PEST & STRESS CLUES

Detect unusual patterns in vegetation that may indicate pests, disease, or other stress factors.



YIELD ESTIMATION

Forecast yields before harvest to support marketing plans, storage needs, and risk management.

KEY BENEFITS



INCREASE PRODUCTIVITY
Make timely decisions that improve yields and quality.



OPTIMIZE RESOURCES
Use water, nutrients, and inputs more efficiently.



REDUCE RISK
Detect issues early and respond before losses occur.



SAVE TIME & COSTS
Monitor more acres in less time with greater confidence.



SUPPORT SUSTAINABILITY
Protect soil and water resources for long-term farm resilience.

KEY TAKEAWAYS

- ✓ Satellite imagery provides timely, field-scale insights across Canada's diverse agricultural landscapes.
- ✓ It complements on-the-ground knowledge to support smarter, data-driven decisions.
- ✓ From planning to harvest, satellites help farm operations become more productive and resilient.
- ✓ Integrating satellite data today builds a stronger, more sustainable agriculture for tomorrow.



HOW SATELLITES HELP CANADA MONITOR WILDFIRES AND NATURAL DISASTERS

DETECT. MONITOR. INFORM. CONNECT. SUPPORTING SAFER COMMUNITIES ACROSS CANADA.

HAZARDS CANADA FACES



WILDFIRES

Fast-moving fires can threaten communities, infrastructure and air quality.



SMOKE AND AIR QUALITY

Smoke travels long distances, impacting health and visibility across Canada and beyond.



FLOODS AND ICE EVENTS

Heavy rain, snowmelt and ice jams can cause widespread flooding and damage.



SEVERE WEATHER IMPACTS

Storms, high winds, hail and tornadoes can damage homes, power and roads.

FROM SPACE TO RESPONSE: THE SATELLITE WORKFLOW

1



DETECT

Satellites collect data day and night, in all weather conditions.

2



RECEIVE

Ground stations in Canada receive and process data.

3



ANALYZE

Data is turned into maps, alerts and insights by experts and AI tools.

4



INFORM

Timely information is shared with decision-makers and the public.

5



RESPOND

Authorities use insights to plan, mobilise resources and issue warnings.

6



RECOVER

Ongoing monitoring supports recovery, damage assessment and rebuilding.

WILDFIRE HOTSPOTS



- Detects heat signatures of active fires
- Tracks fire growth and direction
- Helps prioritize resources and evacuations

SMOKE TRACKING



- Monitors smoke movement and density
- Supports air quality alerts
- Informs aviation and health advisories

FLOOD OBSERVATION



- Maps flood extent and depth
- Tracks changes over time
- Supports rescue, relief and recovery

SEVERE WEATHER IMPACTS



- Monitors storms, winds and precipitation
- Assesses damage after the event
- Helps restore essential services faster

STAYING CONNECTED WHEN IT MATTERS MOST



When wildfire, flooding or storms damage cell towers and internet networks, satellites keep critical communications working.



SATELLITE COMMUNICATIONS

Provide voice, data and messaging from anywhere in Canada.



MOBILE COMMAND SUPPORT

Enable field teams and command centres to share information in real time.



BACKUP AND RESILIENCE

Ensure continuity of operations when terrestrial systems fail.

COORDINATED RESPONSE: WHO USES THE DATA AND HOW

WHO	HOW THEY USE SATELLITE DATA	EXAMPLES OF ACTIONS
 FEDERAL AGENCIES	National situational awareness, hazard assessment, resource coordination	Issue alerts, deploy resources, coordinate cross-provincial support
 PROVINCIAL / TERRITORIAL	Regional monitoring, decision support, emergency operations	Activate plans, manage evacuations, request assistance
 FIRST RESPONDERS	Real-time situational awareness, field operations, safety	Plan routes, protect crews, monitor changing conditions
 COMMUNITIES AND PUBLIC	Timely information, preparedness and recovery updates	Follow advisories, prepare homes, support recovery

BENEFITS FOR EMERGENCY MANAGERS AND COMMUNITIES



EARLY DETECTION

Spot threats sooner and take action before they escalate.



TIMELY DECISIONS

Up-to-date information supports faster, evidence-based decisions.



BETTER RESOURCE USE

Direct resources where they are needed most.



REDUCED IMPACTS

Protect lives, infrastructure and communities.



STRONGER RECOVERY

Monitor damage and track progress toward recovery.



Satellites see the big picture—day and night, in all weather across Canada.



They detect fires, track smoke, observe floods and measure storm impacts.



KEY TAKEAWAYS

Satellite communications keep responders connected when other networks fail.



Canada's agencies work together using satellite data to protect communities.



Space-based information helps build a safer, more resilient Canada for everyone.

HOW SATELLITES PROTECT CANADA'S OCEANS, COASTS, AND FISHERIES

FROM SPACE, ACTIONABLE INTELLIGENCE FOR A SAFER, HEALTHIER, MORE SUSTAINABLE FUTURE



OVERVIEW

Satellites provide an all-weather, wide-area view of Canada's vast marine environment. They deliver timely, reliable data that supports safety, environmental protection, sustainable fisheries, and strong maritime awareness—across the Arctic, Atlantic, Pacific, and Great Lakes.

WHAT SATELLITES MONITOR AT SEA



SHIPPING & VESSELS

Track vessel locations and movements to support marine safety, traffic management, and search and rescue.



FISHING ACTIVITY

Detect and monitor fishing activity to promote sustainable fisheries and support compliance with regulations.



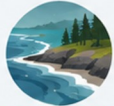
ICE CONDITIONS

Monitor sea-ice extent, thickness, and movement to support safe navigation and community preparedness.



POLLUTION DETECTION

Detect oil spills and other pollutants quickly to enable rapid response and protect marine ecosystems.



COASTAL CHANGE

Monitor shoreline change, erosion, flooding, and habitat conditions to support planning and resilient communities.

OCEAN AND COAST USE CASES: SATELLITES IN ACTION

USE CASE	OCEAN APPLICATIONS	COASTAL APPLICATIONS	BENEFITS
MARINE SAFETY	Monitor vessels, detect distress, support SAR	Monitor hazards near shore and ports	Saves lives and reduces risk
FISHERIES OVERSIGHT	Detect fishing activity, track effort patterns	Support sustainable fisheries nearshore	Supports compliance and healthy stocks
ICE MONITORING	Map sea-ice extent, motion, and thickness	Monitor ice approaches and shorefast ice	Enables safe navigation and community access
POLLUTION DETECTION	Detect oil spills and harmful discharges	Detect pollution near coasts and rivers	Protects ecosystems and resources
COASTAL OBSERVATION	Observe sea surface conditions	Track shoreline change, erosion, and flooding	Informs planning and adaptation
MARITIME AWARENESS	Build a real-time picture of maritime domain	Monitor ports, traffic and coastal activity	Stronger situational awareness

FROM DATA TO DECISION: SATELLITES TURN INFORMATION INTO ACTION



1. ACQUIRE

Satellites collect data day and night, in any weather, across vast areas.



2. PROCESS

Data is processed, combined, and analyzed to extract meaningful insights.



3. DELIVER

Insights are delivered to partners and decision-makers quickly and securely.



4. DECIDE

Authorities act on insights to protect people, the environment, and the economy.



5. OUTCOMES

Safer seas, resilient coasts, sustainable fisheries, and strong communities.

KEY TAKEAWAYS



Satellites provide trusted, wide-area coverage of Canada's oceans, coasts, and Great Lakes—every day.



They enable safer navigation, faster emergency response, and stronger maritime domain awareness.



They support sustainable fisheries and protect marine ecosystems and coastal communities.



They help communities, industries, and governments make better decisions, together.



From the Arctic to the Atlantic, Pacific, and Great Lakes—satellites help Canada thrive.



COVERAGE

All-weather, day and night, across remote and coastal areas.



RELIABLE

Consistent, timely data you can depend on.



COLLABORATIVE

Powering partnerships across Canada and with Indigenous, industry, and international partners.



SUSTAINABLE

Supporting a healthy ocean, resilient coasts, and a strong blue economy.



CANADIAN FOCUS

Information that supports Canada's priorities and sovereign decision-making.



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HOW SATELLITES SUPPORT CANADIAN AVIATION AND TRANSPORTATION

CONNECTING CANADA. POWRING SAFE, EFFICIENT AND SUSTAINABLE TRANSPORTATION.



OVERVIEW

Satellites provide essential data and connectivity that enable safe navigation, real-time awareness and efficient operations across Canada's vast and diverse landscapes and waterways.



AVIATION

- Precision navigation for domestic and international flights
- Surveillance and tracking in remote airspace
- Weather monitoring for safer flight planning
- Communication for voice and data in all regions



MARINE TRANSPORT

- Vessel tracking and monitoring for safety and security
- Route planning and navigation in coastal and Arctic waters
- Marine weather and ice information
- Distress alerts and communication at sea



TRUCKING & LOGISTICS

- Fleet tracking and asset visibility in real time
- Optimized routing and fuel efficiency
- Delivery status and ETA updates
- Two-way communication across the country



REMOTE SUPPLY ROUTES

- Support for northern, rural and indigenous communities
- Monitoring of winter roads and seasonal routes
- Logistics coordination for critical supplies
- Communication in areas without terrestrial coverage

HOW SATELLITE SERVICES ENABLE OPERATIONAL DECISIONS



POSITIONING & NAVIGATION

Satellites provide precise position, timing and navigation anywhere in Canada.



COMMUNICATIONS

Reliable voice and data links connect vehicles, vessels, aircraft and control centers.



WEATHER & ENVIRONMENTAL DATA

Satellites deliver weather, ice, wind and environmental data across the country in real time.



INFORMATION INTEGRATION

Data is combined with other systems to create situational awareness and insights.



OPERATIONAL DECISIONS

Operators make informed decisions to improve safety, efficiency and reliability.

COMMON SATELLITE-ENABLED SERVICES

SERVICE	WHAT IT DOES	BENEFITS
Satellite Navigation	Provides positioning, navigation and timing (PNT)	Enables precise routing, landing, tracking and synchronization
Satellite Communications	Enables voice, data and messaging over large distances	Keeps people and assets connected anywhere in Canada
Satellite Weather & Earth Observation	Monitors weather, ice, terrain and environmental conditions	Supports weathing, risk, reduction and route safety
Satellite Distress & Safety Services	Detects distress signals and supports search and rescue	Improves emergency response and saves lives
Satellite Tracking & Monitoring	Tracks location and status of assets in real time	Enhances security, accountability and operational visibility

IMPROVING SAFETY AND EFFICIENCY

	SAFETY FIRST Better situational awareness and reliable communications reduce risk for passengers and crews.
	GREATER EFFICIENCY Optimized routes, less downtime and lower fuel use save time and reduce costs.
	ENVIRONMENTAL BENEFITS Efficient operations and better routing help reduce emissions and environmental impact.
	CONNECTING COMMUNITIES Satellites bridge the distance to support economic opportunity and quality of life across Canada.

KEY TAKEAWAYS

	Satellites provide the backbone for navigation, communication, weather information and tracking across Canada.
	All modes of transportation—air, marine, road and remote routes—depend on satellite services to operate safely and efficiently.
	Reliable satellite connectivity supports economic growth, resilient supply chains and national security.
	Investment in satellite services today builds a safer, more connected and sustainable Canada for tomorrow.



HOW CANADA USES SATELLITES TO MONITOR CLIMATE AND THE ENVIRONMENT

FROM SPACE. FOR CANADIANS. FOR A SUSTAINABLE FUTURE.



OVERVIEW

Satellites provide a unique, nationwide perspective of Canada's vast and diverse environments. They collect consistent observations over time—across land, water, ice, and atmosphere—helping us understand changes, manage risks, and protect our natural resources.



WHAT WE MONITOR FROM SPACE

FORESTS
Tree cover, forest health, disturbances and regrowth.

ICE & SNOW
Sea ice extent, glacier change, snow cover and duration.

WATER
Lake levels, river conditions, coastal waters and water quality indicators.

PERMAFROST
Permafrost extent, active layer thickness and land surface conditions.

LAND-USE CHANGE
Urban growth, agriculture, mining, roads and other changes to the landscape.

ECOSYSTEMS
Vegetation health, wetlands, habitat condition and biodiversity indicators.

WILDFIRES
Fire detection, active fire monitoring and burned area mapping.

ATMOSPHERE
Greenhouse gases, aerosols, clouds and air quality indicators.

WHAT SATELLITES OBSERVE AND WHY IT MATTERS

WHAT SATELLITES OBSERVE	EXAMPLES OF DATA	WHY IT MATTERS
Land surface and vegetation	Tree cover, vegetation health, land cover maps	Supports forest management, wildfire planning, carbon accounting and habitat conservation
Ice, snow and glaciers	Sea ice extent, snow cover, glacier velocity	Informs shipping, communities, water supply, and climate research
Water resources	Lake and river levels, surface water extent, water quality	Helps manage droughts, floods, drinking water sources and aquatic ecosystems
Permafrost and soils	Permafrost extent, ground temperature, surface changes	Supports infrastructure planning and northern community resilience
Land-use and infrastructure	Urban expansion, agriculture, mining, roads, pipelines	Guides land-use planning and sustainable development
Ecosystems and biodiversity	Wetlands, vegetation indices, habitat indicators	Supports conservation, species at risk monitoring and ecosystem management
Wildfires	Active fires, smoke, burned area, fire risk conditions	Improves response, protects communities and tracks ecosystem impacts
Atmosphere and air quality	Greenhouse gases, aerosols, clouds, air quality	Tracks pollution, informs climate action and public health decisions

FROM SPACE TO SOLUTIONS: THE PROCESS



TRACKING LONG-TERM TRENDS



Satellites provide long-term, consistent records that reveal how Canada's environment is changing. These trends help us anticipate risks, evaluate actions, and build a more resilient future.

WARMING CLIMATE
Rising temperatures

CHANGING ICE
Declining sea ice

WATER SHIFTS
Changing water

ECOSYSTEM IMPACTS
Shifts in habitats,

SUPPORTING ENVIRONMENTAL STEWARDSHIP

SUPPORTING INDIGENOUS KNOWLEDGE
and community-

STRENGTHENING CONSERVATION
Protecting nature and biodiversity

BUILDING RESILIENCE
Helping communities prepare for and adapt to climate

ENABLING SUSTAINABLE ECONOMIES
Balancing growth

IMPROVING TRANSPARENCY
Open data and science-based

KEY TAKEAWAYS

- ✓ Satellites give Canada a complete, timely view of our environment.
- ✓ They help us detect change, manage risks and seize opportunities.
- ✓ They support evidence-based decisions for today and future generations.
- ✓ Space-based information is essential for climate action and sustainable stewardship.





HOW SATELLITE NAVIGATION POWERS EVERYDAY LIFE IN CANADA

PRECISE POSITIONING AND TIMING. CONNECTING CANADIANS. POWERING WHAT MATTERS.



OVERVIEW



Satellite navigation and timing services—delivered by global constellations and supported by Canadian infrastructure—provide precise position, navigation and time (PNT) anywhere in Canada.

From the apps on your phone to the systems that run our economy and keep communities safe, PNT is a silent utility we all rely on every day.



GLOBAL COVERAGE
Services available across Canada, in all seasons and conditions.



PRECISE AND RELIABLE
High accuracy positioning and ultra-reliable timing when and where it's needed.



RESILIENT BY DESIGN
Multiple satellite systems and monitoring support continuity and integrity.



ENABLING PRODUCTIVITY
Supports innovation, efficiency, safety and economic growth.

POWERING EVERYDAY APPLICATIONS ACROSS CANADA



SMARTPHONES AND APPS

Navigation, ride hailing, fitness tracking, photo location, and more.



EMERGENCY SERVICES

Faster response with caller location, route optimization, and situation awareness.



BANKING AND PAYMENTS

Secure transactions and fraud monitoring rely on precise time and location.



TIME SYNCHRONIZATION

Keeps networks, data centres, financial markets and communications in perfect sync.



SURVEYING AND MAPPING

Precise measurements for property, resources, and infrastructure planning.



CONSTRUCTION

Machine guidance, site positioning, and progress tracking improve safety and efficiency.



AGRICULTURE

Precision planting, auto-steer, and yield monitoring increase productivity and sustainability.



TRANSPORTATION AND LOGISTICS

Route optimization, asset tracking, and on-time deliveries across the country.



UTILITIES AND INFRASTRUCTURE

Grid timing, field operations, and asset management powered by PNT.

TWO ESSENTIAL SERVICES: POSITIONING AND TIMING



POSITIONING USES (WHERE)



PRECISE TIMING USES (WHEN)

	WHAT IT PROVIDES	Your location, speed, and direction.	Exact time, synchronized everywhere.
	HOW IT'S USED	Navigate, guide, track, measure and map.	Sync networks, transactions, and operations.
	EVERYDAY EXAMPLES	Maps and navigation, ride sharing, surveying, construction equipment, recreational outdoor apps.	Banking transactions, mobile networks, power grids, data centres, broadcasting.
	WHY IT MATTERS	Helps you know where you are and how to get there safely.	Ensures systems work together accurately and securely.

FROM SATELLITE SIGNALS TO REAL-WORLD DECISIONS

1. SIGNALS



Satellites transmit navigation and timing signals to Earth.

2. DEVICES AND SYSTEMS



Devices and critical systems receive signals and calculate position and precise time.

3. DECISIONS AND ACTIONS



Accurate information enables better decisions, safer operations, and efficient services.

WHY RELIABILITY MATTERS



SAFETY FIRST

Reliable PNT supports emergency response, aviation, marine, and road safety.



ECONOMIC IMPACT

Billions of dollars in Canadian economic activity rely on PNT-enabled services.



RESILIENCE AND CONTINUITY

Multiple satellite systems and Canadian monitoring help detect issues and maintain service.



ALL CONDITIONS, ALL REGIONS

Works across urban centres, rural areas, and the North—year-round.



KEY TAKEAWAYS



Satellite navigation and timing power countless services Canadians use every day.



Positioning shows us where. Precise timing keeps everything in sync.



From smartphones to critical infrastructure, PNT connects and empowers our lives.



Investing in reliable PNT strengthens safety, productivity, and Canada's future.



A trusted utility. A stronger Canada. Today and tomorrow.



HOW SATELLITES SUPPORT CANADA'S ARMED FORCES AND NATIONAL SECURITY

ENABLING AWARENESS, CONNECTIVITY, AND DECISION-MAKING—ANYTIME, ANYWHERE



OVERVIEW

Satellites extend Canada's reach, enabling situational awareness, secure communications, precise navigation, and timely information—supporting our people and missions at home and around the world.

CORE CAPABILITIES ENABLED BY SATELLITES



SECURE COMMUNICATIONS

Reliable, protected voice, data, and video links for forces anywhere.



PRECISE NAVIGATION

Accurate positioning, timing, and navigation for missions and platforms.



EARTH OBSERVATION

Imagery and data reveal activity, changes, and conditions on land, at sea, and in the Arctic.



ARCTIC AWARENESS

Monitoring vast and remote areas to support sovereignty, safety, and operation planning.



MARITIME AWARENESS

Tracking vessels and activity to protect Canada's waters and maritime interests.



SEARCH & RESCUE SUPPORT

Locating distress signals, assessing conditions, and coordinating response efforts.



COORDINATION WITH ALLIES

Sharing information and services to strengthen collective security operations.

HOW SATELLITES SUPPORT KEY MISSION ROLES

MISSION ROLE	HOW SATELLITES HELP	BENEFITS
 COMMUNICATIONS	Provide global, secure connectivity for voice, data, and video across air, land, sea, and space.	✓ Continuous command and control and information sharing.
 NAVIGATION	Deliver precise positioning, navigation, and timing for military platforms and personnel.	✓ Improved accuracy, safety, and mission effectiveness.
 INTELLIGENCE SUPPORT	Collect imagery and data to understand activities, detect changes, and assess threats and risks.	✓ Better situational awareness and informed decisions.
 SEARCH & RESCUE SUPPORT	Detect distress beacons, map areas, and communicate with responders in remote locations.	✓ Faster localization and more effective rescue operations.

FROM OBSERVATION TO COMMAND DECISION



RESILIENT SYSTEMS. INTEROPERABLE OPERATIONS.



RESILIENT BY DESIGN

Protected against disruption with redundant assets, hardened links, and robust networks.



INTEROPERABLE

Works with allied systems and international partners for seamless information sharing.



FLEXIBLE & ADAPTABLE

Supports a wide range of missions from daily operations to crises and humanitarian support.

MISSION IMPACT

- ✓ Protects Canada and Canadians
- ✓ Supports sovereignty in the Arctic
- ✓ Enhances readiness and responsiveness
- ✓ Strengthens alliances and global stability



KEY TAKEAWAYS



Satellites extend Canada's reach and awareness across vast distances and harsh environments.



They provide secure connectivity and precise navigation for effective operations.



They deliver critical information to detect, understand, and respond to evolving situations.



They enable faster, better-informed decisions that save lives and protect national interests.



They strengthen Canada's partnerships and contribute to a safer, more secure world.

HOW SATELLITE SERVICES POWER CANADA'S MODERN ECONOMY

CONNECTING PEOPLE, INDUSTRIES, AND COMMUNITIES ACROSS OUR VAST AND DIVERSE NATION

OVERVIEW

Satellites extend reach beyond terrestrial networks—delivering reliable connectivity, data, and insights anywhere in Canada. From the Arctic to rural communities and global markets, satellite services enable businesses, support critical services, and drive sustainable economic growth.



WIDE COVERAGE



RELIABLE & RESILIENT



ECONOMIC GROWTH



STRONGER CANADA

SATELLITE SERVICES SUPPORT KEY SECTORS OF CANADA'S ECONOMY



TELECOMMUNICATIONS

Extends broadband and mobile backhaul to rural, remote, and Indigenous communities, bridging the digital divide.



MINING

Enables exploration, monitoring, and operations in remote areas, improving safety and productivity.



ENERGY

Supports exploration, field operations, and pipeline monitoring across onshore and offshore regions.



AGRICULTURE

Provides farm connectivity, crop monitoring, and precision agriculture insights to increase yields and efficiency.



TRANSPORTATION

Supports marine, air, and land operations with tracking, communications, and weather information for safer, smarter travel.



FORESTRY

Enables forest monitoring, logging operations, and wildfire detection to support sustainable resource management.



FINANCE

Supports secure communications, market access, and connectivity for remote branches and ATMs.



PUBLIC SERVICES

Enhances connectivity for healthcare, education, justice, and municipal services in all communities.



RESEARCH

Enables scientific data collection and collaboration in remote regions and the Canadian Arctic.



EMERGENCY MANAGEMENT

Provides resilient communications and situational awareness during disasters and critical events.

HOW SATELLITE SERVICES DELIVER ECONOMIC VALUE

ECONOMIC FUNCTION	EXAMPLE SATELLITE SERVICE	PRACTICAL BENEFIT
 CONNECTIVITY	Broadband, backhaul, mobile satellite services	Keeps people and businesses connected anywhere in Canada.
 EARTH OBSERVATION	Satellite imagery, remote sensing	Provides real-time insights for monitoring, planning, and decisions.
 NAVIGATION & TIMING	GNSS (e.g., GPS), precise timing	Enables precise location, timing, and synchronization of systems.
 DATA DELIVERY	Secure data links, command and control	Ensures reliable delivery of critical data and communications.
 VOICE & COMMUNICATIONS	Satellite voice, messaging, IoT connectivity	Supports voice, messaging, and Internet of Things applications.

RESILIENCE FOR A VAST AND CHANGING CANADA



Provides connectivity when terrestrial networks are unavailable.



Supports response and recovery during natural disasters and emergencies.



Enables operations and safety in extreme and remote environments.



Strengthens inclusion and opportunity for all Canadians.

IMPORTANT TAKEAWAYS



SATELLITE SERVICES CONNECT CANADIANS AND BUSINESSES WHEREVER THEY ARE.



THEY ENABLE SUSTAINABLE GROWTH ACROSS ALL MAJOR SECTORS.



THEY BUILD RESILIENCE IN THE FACE OF DISTANCE, DISRUPTION, AND CHANGE.

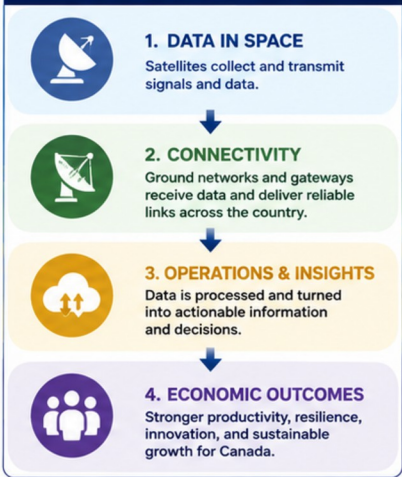


THEY DRIVE INNOVATION AND COMPETITIVENESS IN THE GLOBAL ECONOMY.



SATELLITE SERVICES HELP BUILD A STRONGER, MORE PROSPEROUS CANADA FOR ALL.

THE SATELLITE VALUE CHAIN



COMPETITIVENESS IN A GLOBAL ECONOMY



Opens global markets and supply chains for Canadian industries.



Drives innovation through data, insights, and advanced applications.



Improves productivity and operational efficiency.



Attracts investment and supports economic growth across the country.

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