Implementing Canada's Strategy for Satellite Earth Observation

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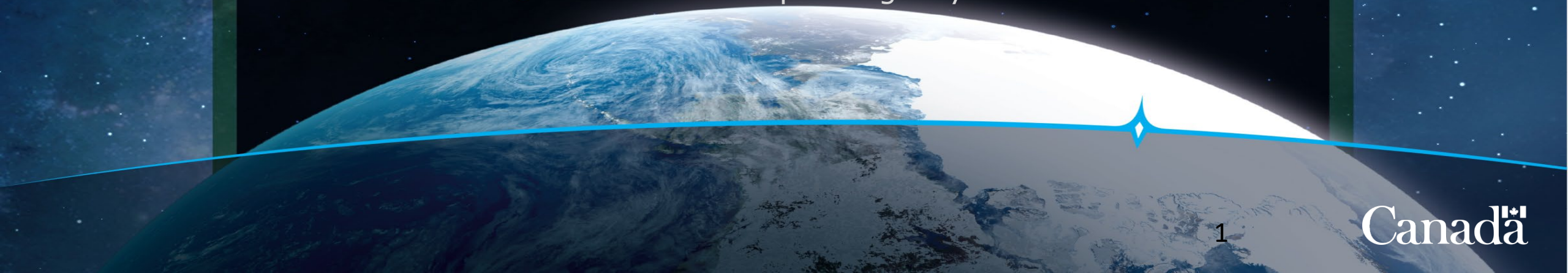
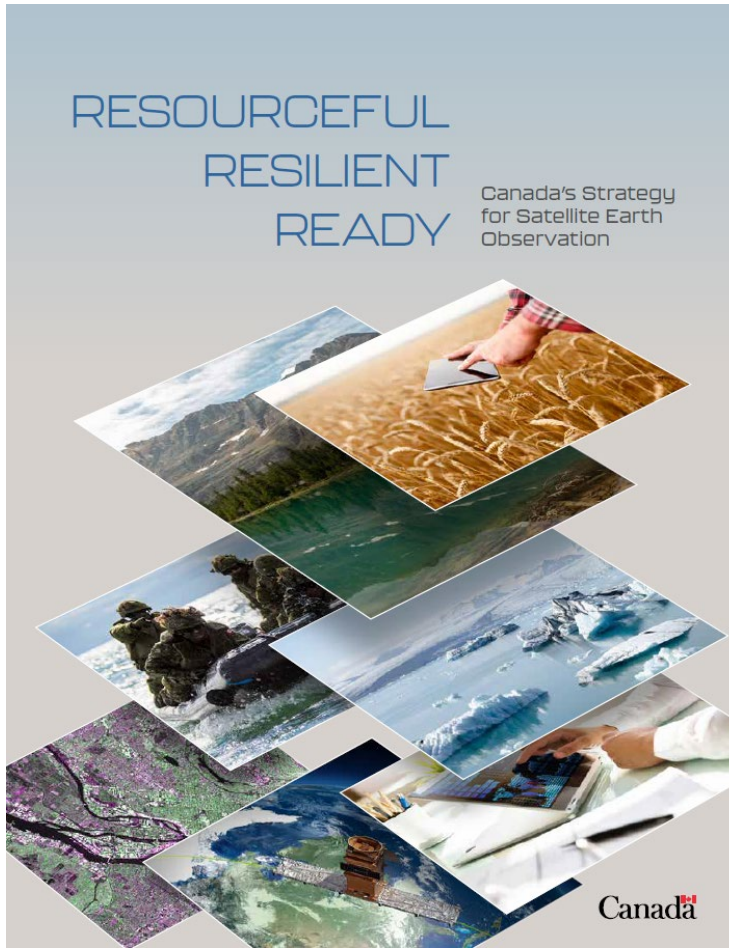


Canada

Resourceful, Resilient, Ready:
Canada's Strategy for Satellite Earth Observation



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The Canadian Space Agency, Environment and Climate Change Canada, and Natural Resources Canada led a whole-of-government effort to seek input from industry and academia to develop Canada's long-term satellite Earth observation strategy.

Strategy Objectives:

1. Ensure the benefits of satellite EO are maximized.
2. Harness satellite EO to tackle climate change and issues that matter to Canadians.
3. Strengthen delivery of critical services to keep Canadians healthy, safe and informed.
4. Inspire satellite EO skills and capacity development for the next generation.

EOSC – Architecture Perspective

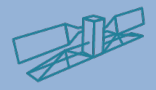
Value chain from sensor to users

4 Sources of Imagery offers resiliency, cost effectiveness and adaptability to rapidly changing context

Sources

Canadian Sovereign System

Commercial Sources



International Collaboration

Free & Open

Stations

Ops

PED

Users

WildFireSat - GardeFeu

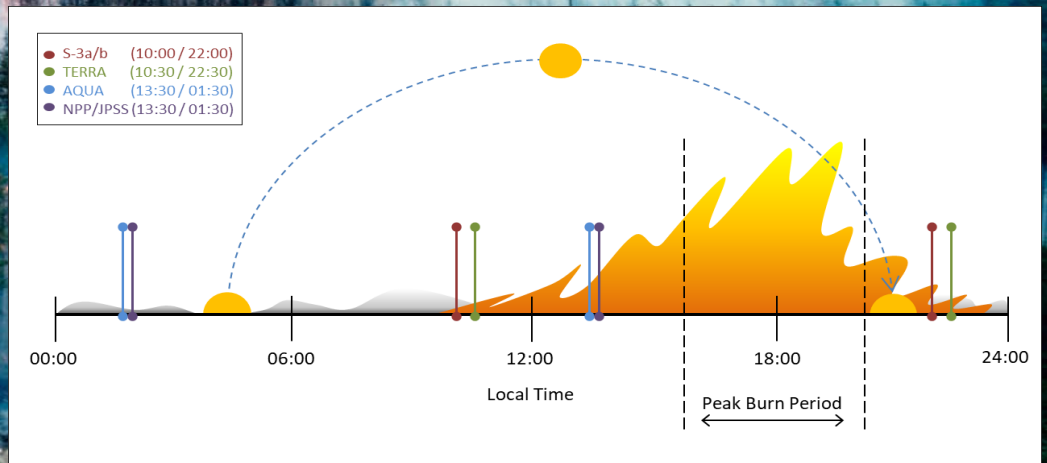
- 3-Satellite Operational Constellation for Fire Monitoring in Canada has just been approved!
- 5-year mission to provide daily coverage of Canada AOI
- Phase B: 2022; Launch: 2028; Operations 2028-2033

- Open Data Policy
- Partnership discussions to coordinate with other systems to be conducted in 2022-23.

https://www.asc-csa.gc.ca/eng/satellites/wildfiresat/default.asp

Key Features:

- VIS/NIR , Mid-Wave and Long-Wave
- Fire Radiative Power optimised;
- Detection capacity at 15 x 15 m fire;
- 30 min data latency in Canada
- Uncooled micro-bolometer detectors



RADARSAT Constellation Mission (RCM)
A strategic asset for Canada

70

Government Programs & Services rely on a regular and predictable source of SAR imagery

12

Government Departments

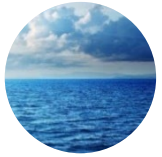
250 000

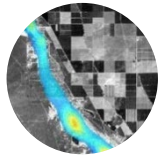
SAR scenes/yr used by Government
A **50 fold** increase from RADARSAT 1 and demand is growing

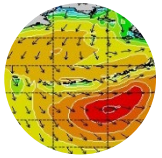
RCM imagery is an integral part of many GC service delivery and support to policy


Ice & Icebergs detection & dynamics

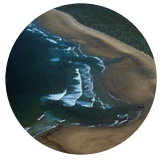

Oil detection & tracking


Maritime features and surveillance

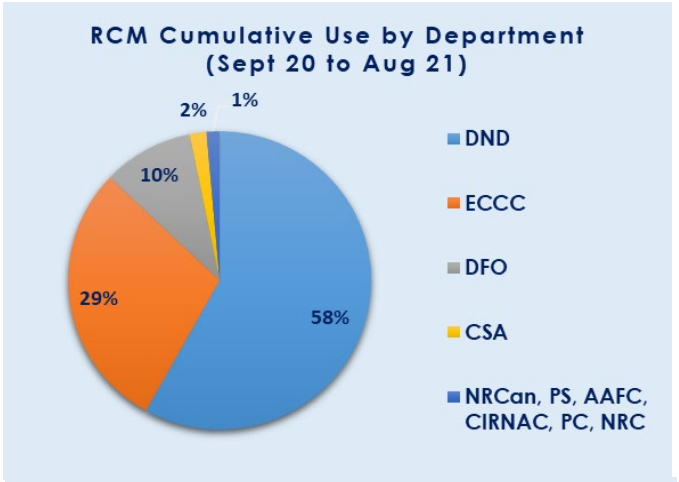

Infrastructure monitoring

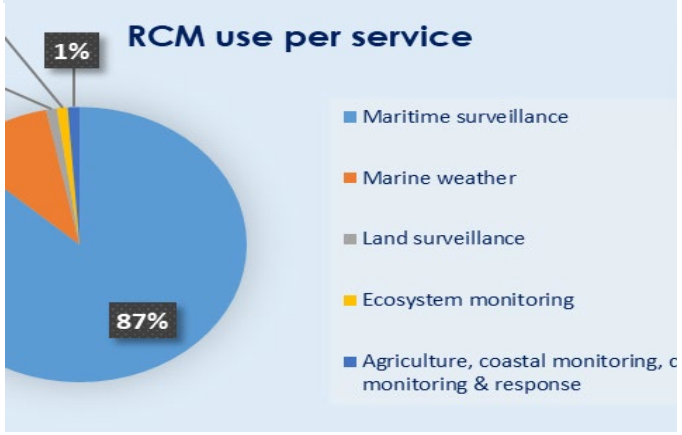

Wind data


Agriculture and food systems


Wet/Humid

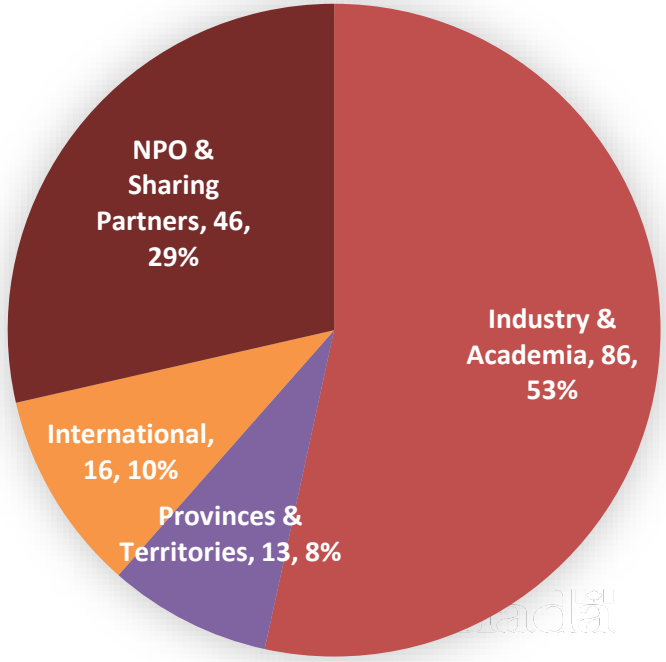

Support to emergency response





RCM Vetted Users

161



Examples of early implementation

Maximize access & benefits	Tackle climate change	Strengthen critical services & infrastructure	EO skills & capacity development
❑ Review of the Remote Sensing Space Systems Act	❑ GHGSat, Inc investment ($20M, Nov 2021)	❑ Investment in updating critical infrastructure to receive satellite data ($80M B2021)	❑ SmartEarth ($8M, Jan 2022)
❑ Signature of Canada-EU Copernicus Cooperation Arrangement	❑ WildFireSat	❑ Earth Observation Service Continuity (RCM follow-on; $9.9M B2021)	❑ Earth System Data and Analysis Grants
❑ Review of the MOU with EUMETSAT	❑ Arctic Observing Mission		❑ Investigation of a satellite EO coordination office
❑ Options analysis and pilots for Digital Earth Canada (DEC)	❑ High-Altitude Water Clouds on NASA's Atmosphere Observing System		❑ Investigation of capacity development options
	❑ Terrestrial Snow Mass Mission		
	❑ National imagery subscription options		

Continued scanning for opportunities to align with other strategies, funding, and efforts across the federal government.