



CSA Report on Earth Observation

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Agence spatiale
Canadienne

Canadian Space
Agency

RADARSAT-1 Program Status (1)

- Completed successfully ten years of operation
- Data received and processed at 32 ground stations with 22 archive facilities globally, covering real time 80% of world's landmass
- As of March 2006, completed 54,255 orbits, planned 230,730 user requests corresponding to a total acquisition of 404,174 minutes of SAR data
- Average system performance maintained better than 95%
- Product quality and calibration fully maintained
- As a member of International Charter Space and Major Disasters, provided SAR data for about 104 Charter emergencies to date
- On board recorder(OBR)2 not operational, OBR1 showing aging effect

RADARSAT-1 Program Status (2)

- Built extensive global radar data archive
 - First complete radar stereo coverage of world's landmass
 - Complete interferometric coverage of Canada and of selected sites around the world
 - First complete high-resolution coverage of Antarctica
- I-STOP (Integrated Satellite Tracking of Oil Polluters) project for Canadian waters made operational in collaboration with other government departments
- Spacecraft health and resource utilization appear to indicate a continuation of operation at least until RADARSAT-2 becomes operational in 2007, preferably until March 2009 to support IPY (operational funding an issue)

SCISAT-1 Program Status

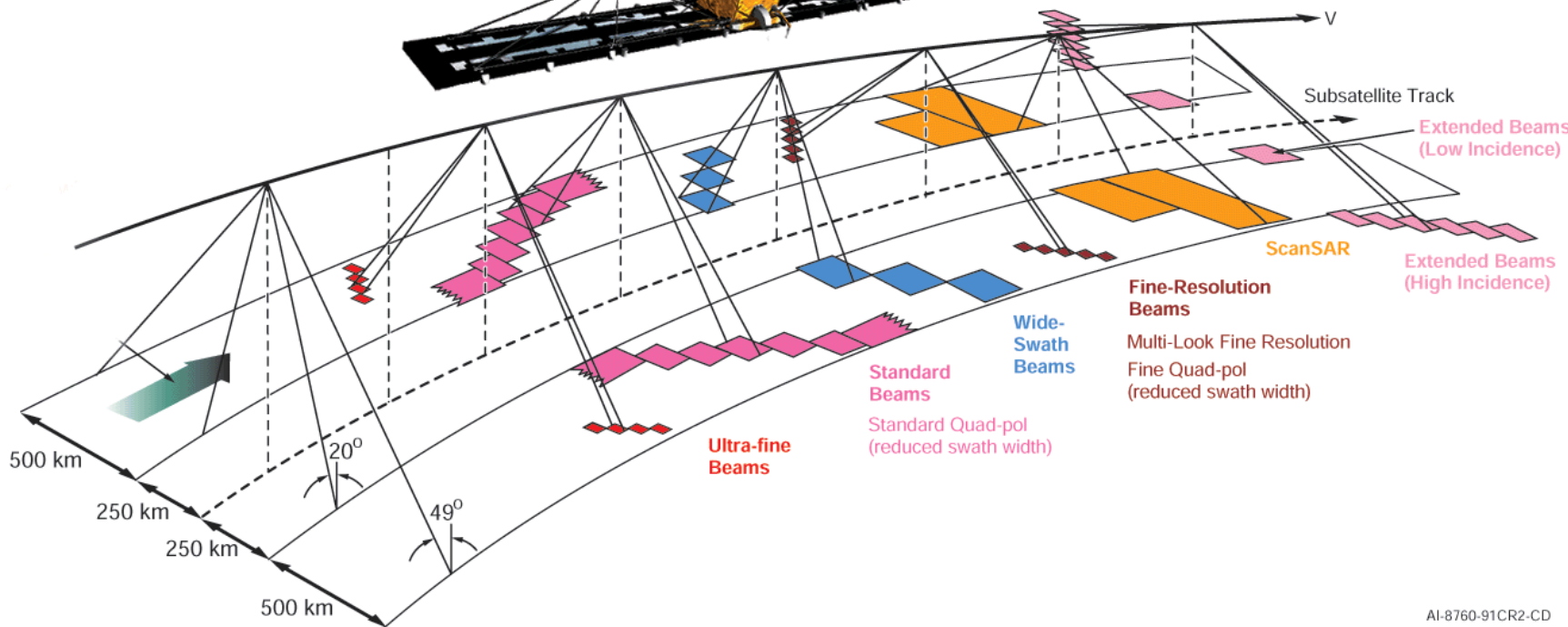
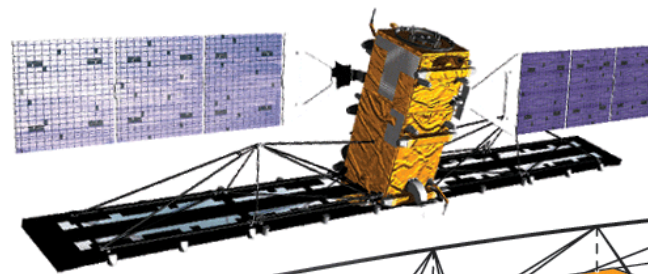
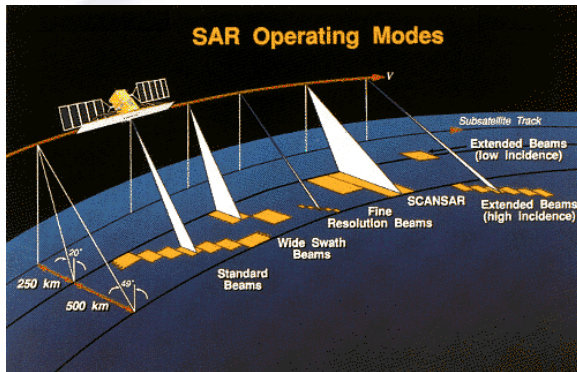
- Launched in August 2003, SCISAT-1 satellite measures numerous trace gases, thin clouds and aerosols in the stratosphere, thereby enabling a more comprehensive understanding of the several chemical processes that play a role in stratospheric ozone depletion
- Capacity to receive science data was augmented from 1.1 GB (gigabytes) to 2.9 GB per day by employing two Canadian stations and those of US and European partners
- Last year alone amounts of science data collected were: FTS: 903 GB, Imager: 113 GB, MAESTRO: 22 GB
- Data routinely being provided to the science team

RADARSAT-2 Program Status (1)

- Most advanced commercial C-band SAR satellite
- Multi-polarization
- Ultra fine resolution (3 m)
- Swath width range: 20 to 500 Km
- Right- and left-looking modes
- Launch schedule: December 2006
- Data continuity to RADARSAT-1 users

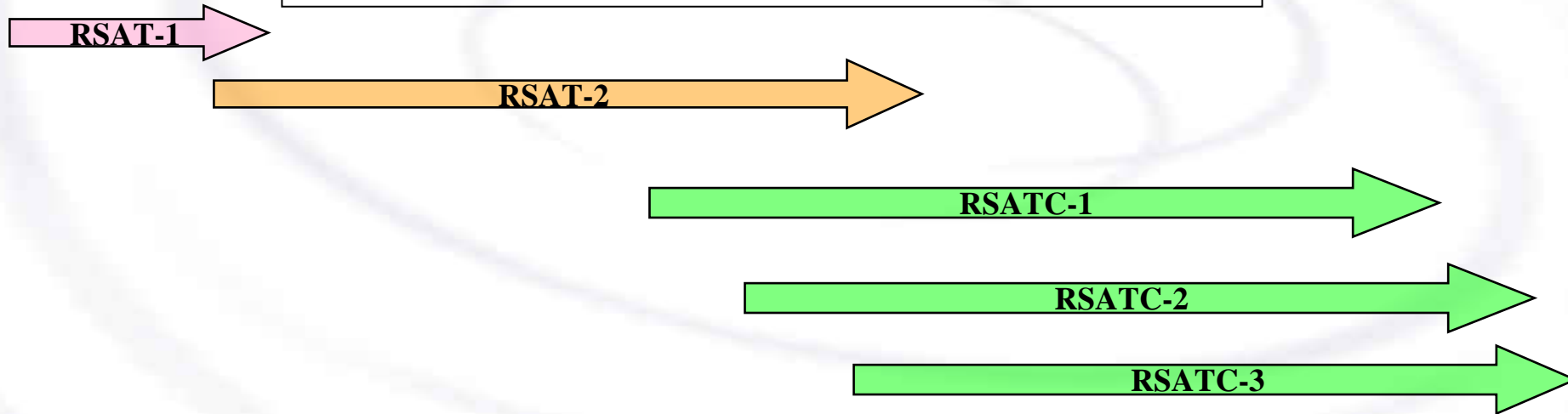
	Design Life	Imaging frequency	Spatial resolution	Polarization	Look direction	Status
RADARSAT-2	7 years	C-Band, 5.405 GHz	3 to 100 meters	Single (HH, VV, VH, HV) Dual (HH/ HV, VV/VH) Polarimetric	Right- and left-looking	Launch Dec. 2006
RADARSAT-1	5 years	C-Band, 5.3 GHz	10 to 100 m	Single HH	Right-looking	In operation (Since 95)

RADARSAT-2 Program Status (2)



RADARSAT Constellation (RSATC)

- Constellation of 3 satellites in same orbital plane, equally spaced 15 to 30 minutes apart
- 5 year development
- 1 satellite launched every year, starting 2011
- On an average daily and complete coverage of Canada's land and oceans at 50 m resolution



2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	»
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SWIFT and Chinook

- Development continued, in collaboration with ESA, of an instrument called SWIFT (Stratospheric Wind Interferometer for Transport) to validate complex climate and weather models
- SWIFT to fly on Canadian small satellite bus under a CSA mission called Chinook
- Launch in 2009



International Collaboration

- CEOS as member since its creation
- Canada – USA
 - RADARSAT-1
- Canada – ESA
 - Associate member of ESA
 - TIGER Initiative
 - Canadian investment of \$3.4 million for seven R&D projects for water management in Africa under CSA's EOADP (Earth Observation Applications Development Program)
- Canada – China
 - MOU CSA – CCRS - Chinese Academy of Sciences (CAS)
 - MOU CSA – CCRS – Institute of Remote Sensing Applications (IRSA)
- Canada – Norway
- Canada – Finland
- International Charter "Space and Major Disasters"



International Collaboration



RADARSAT-2 – Science and Operational Applications Research (SOAR) data access Program

Open to Academia, Industry and Government to develop new applications with RADARSAT-2 enhanced modes

Visit website <http://RADARSAT2.info>