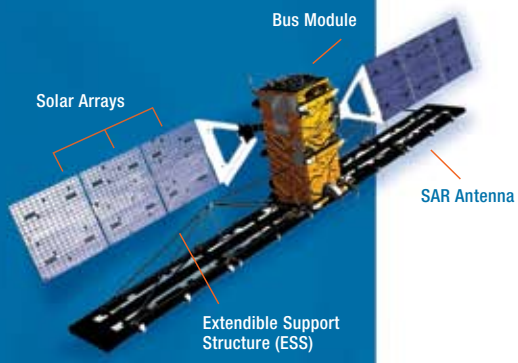
Built for performance and versatility



The **RADARSAT-2** spacecraft is composed of the bus, the payload module, and the extendible support structure (ESS).

Bus: the elements that provide general spacecraft support functions, such as attitude measurement and control, telemetry and command, data storage and retrieval, power generation and storage, and thermal control. It was built by Alenia Aerospazio, a leading supplier of space systems and hardware based in Rome, Italy.

Payload: the SAR antenna and specific support equipment required for timing and control of the payload, signal distribution, signal detection and thermal control. The **RADARSAT-2** SAR antenna was built by MDA in Montréal, Quebec.

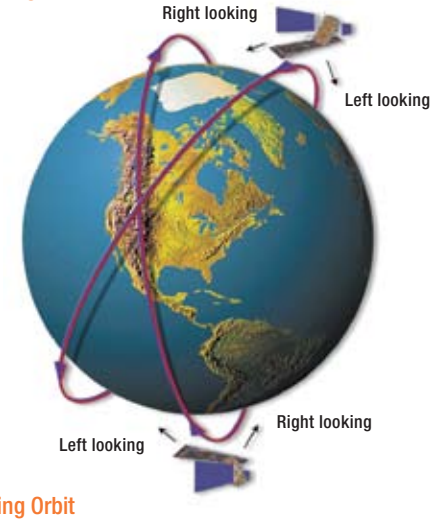
ESS: the mechanical interface between the bus and antenna structure. Once deployed, it preserves the flatness and attitude of the antenna. AEC Able of Santa Barbara, California, built the ESS.

Launch: by Starsem on a Soyuz launch vehicle, from Baikonur, Kazakhstan. At launch, the spacecraft mass is about 2,300 kilograms.

ORBIT

Except for an offset in time, **RADARSAT-2**'s orbit is identical to that of RADARSAT-1. The spacecraft orbit control system can maintain ground track repeatability of five kilometres, with a goal of about one kilometre at any point in the orbit.

Descending Orbit



Ascending Orbit

ORBIT CHARACTERISTICS	
Altitude (average)	798 kilometres
Inclination	98.6 degrees
Period	100.7 minutes
Ascending node	18 hours (±15 minutes)
Sun-synchronous	14 orbits per day
Repeat cycle	24 days

COVERAGE ACCESS USING 500 KM SWATH WIDTH	
North of 70°	Daily
Between 48° and 70°	Every 1-2 days
Equator	Every 2-3 days

INNOVATIONS AND BENEFITS

	RADARSAT-1	RADARSAT-2 INNOVATIONS	BENEFITS
Spatial resolution	10 to 100 metres	3 to 100 metres	• Ultra-Fine beam improves object detection and recognition
Polarization	HH	HH, HV, VV and VH	• Better discrimination of various surface types and improved terrain classification capability
Look direction	Right-looking (left-looking for Antartic missions)	Routine left- and right-looking operation	• Faster revisit time • Routine Antarctic mapping available
On-board recording device	Analogue recorders	Solid-state recorders	• Higher reliability • Simultaneous reading and writing • Permits random access to data
Global positioning system	None	GPS receivers onboard	• ± 60-metre real-time position information
Yaw-steering	None	Yaw-steering for zero Doppler shift at beam centre	• Facilitates image processing