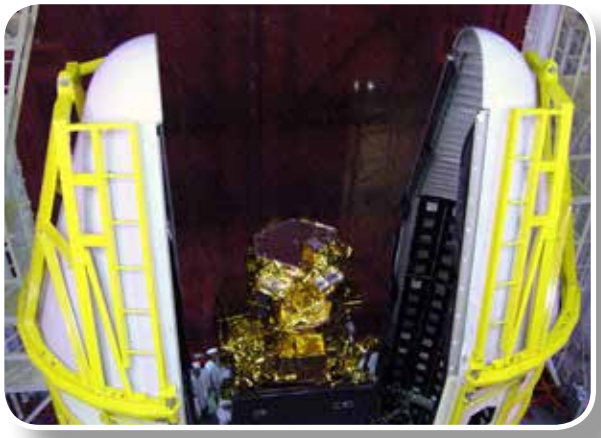
PSLV-C5 / RESOURCESAT-1 (IRS-P6) Mission

17 October, 2003

THE MISSION

PSLV-C5 carrying on-board the RESOURCESAT-1 (IRS-P6) lifted-off from the Satish Dhawan Space Centre (SDSC) SHAR, Sriharikota at 10:22 AM (IST) on October 17, 2003. RESOURCESAT-1 was launched into 817 km high Polar Sun-synchronous Orbit. The 1,360 kg RESOURCESAT-1 is the most advanced and heaviest Remote Sensing Satellite launched by ISRO so far. PSLV forms an important component of the end-to-end system created by ISRO for natural resource planning and management.



PSLV-C5

THE LAUNCH VEHICLE

PSLV-C5 is the 8th flight of ISRO's Polar Satellite Launch Vehicle. Since its first flight in 1993, the payload capability of PSLV has been progressively improved by more than 600 kg. PSLV has also launched multiple satellites. In the PSLV-C5, the metallic third stage adapter was replaced by the one built with carbon composites. Also, the liquid propellant second stage was operated at a higher chamber pressure for better performance.

In its present configuration, the 44.4 m tall, 294 tonne PSLV has four stages using solid and liquid propulsion systems alternately. The 3.2 m diameter metallic bulbous payload fairing of PSLV is of isogrid construction and protects the spacecraft during the atmospheric regime of the flight. PSLV employs a large number of stage auxiliary systems for stage separation, payload fairing separation and jettisoning, etc.

PSLV emerged as the workhorse launch vehicle of ISRO for launching satellites into SSO as well as Geosynchronous Transfer Orbit (GTO). PSLV is also offered for launching satellites of other space agencies / countries through the Antrix Corporation Limited.

SPECIFICATIONS

Height	44.4 m
Lift-Off Mass	294 t
No of Stages	4
Payloads	RESOURCESAT-1 (IRS-P6)
Orbit Height	817 km
Inclination (deg)	98.728^0
Launch Azimuth	140^0

RESOURCESAT-1 (IRS-P6)

THE SATELLITE

RESOURCESAT-1 is the 10th satellite of ISRO in IRS series. RESOURCESAT-1 is intended to not only continue the remote sensing data services provided by IRS-1C and IRS-1D, both of which have far outlived their designed mission lives, but also to vastly enhance the data quality.

Based on the study and experience of remote sensing data from previous satellites, it was decided to have payload combination to serve all intended applications. This led to the design and development of Resourcesat-1. It was a workhorse mission with a combination of three multi-spectral and multi-resolution cameras for natural resource monitoring and management. It carried three cameras; high resolution Linear Imaging Self-Scanner (LISS-4), medium resolution Linear Imaging Self-Scanner (LISS-3) & Advanced Wide Field Sensor (AWiFS). All three cameras were “push broom” scanners using linear arrays of CCDs. LISS-4 operate in three spectral bands in the Visible and Near Infrared Region (VNIR) with 5.8 m spatial resolution. LISS-3 operates in three spectral bands in VNIR and one in Short Wave Infrared (SWIR) band with 23.5 m spatial resolution and AWiFS operates in three spectral bands in VNIR and one band in SWIR with 55 m spatial resolution.

RESOURCESAT-1 is the most advanced Remote Sensing Satellite built by ISRO as of 2003.

SPECIFICATIONS

Weight	1360 kg
Power	Solar Array: 1250 W Batteries: Ni-Cd 24 Ah
Stabilization	3-axis body stabilised using Reaction Wheels, Magnetic Torquers and Hydrazine Thrusters
Type of Satellite	Earth Observation
Payloads	• LISS-4 • LISS-3 • AWiFS-A • AWiFS-B
Mission Life	5 Years