



PSLV-C15/CARTOSAT-2B Mission

INDIAN SPACE RESEARCH ORGANISATION

Vehicle

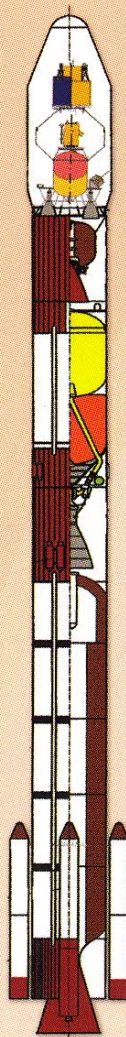
PSLV Core Alone Variant with L2.5 as upper stage

Mission Specification

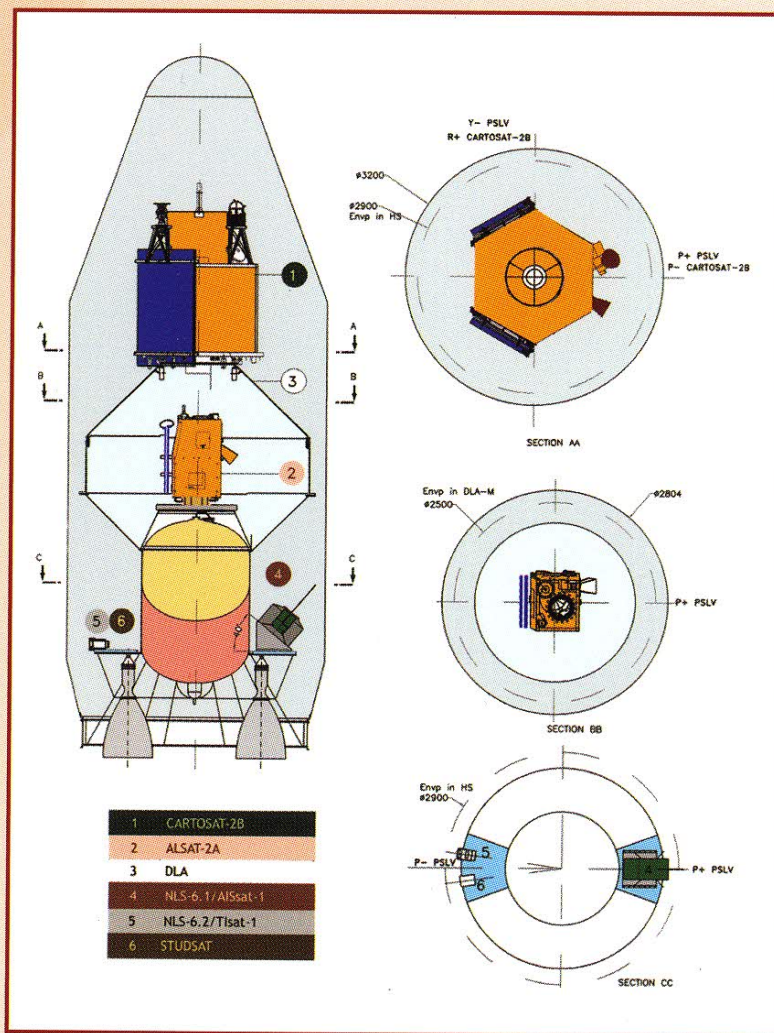
Orbit (Osculating) : 637 km
circular SSPO
Inclination : 98.1 deg
Launch Time : 09:22 hrs IST
Launch Window : -0/+15 min
Launch Pad : First Launch Pad
Launch Azimuth : 140 deg

Vehicle Characteristics

Vehicle Height : 44.4 m
Lift off mass : 229 t
Propulsion Stages
First Stage (PS1) : S139
Second Stage (PS2) : PL40
Third Stage (PS3) : HPS3
Fourth Stage (PS4) : L2.5

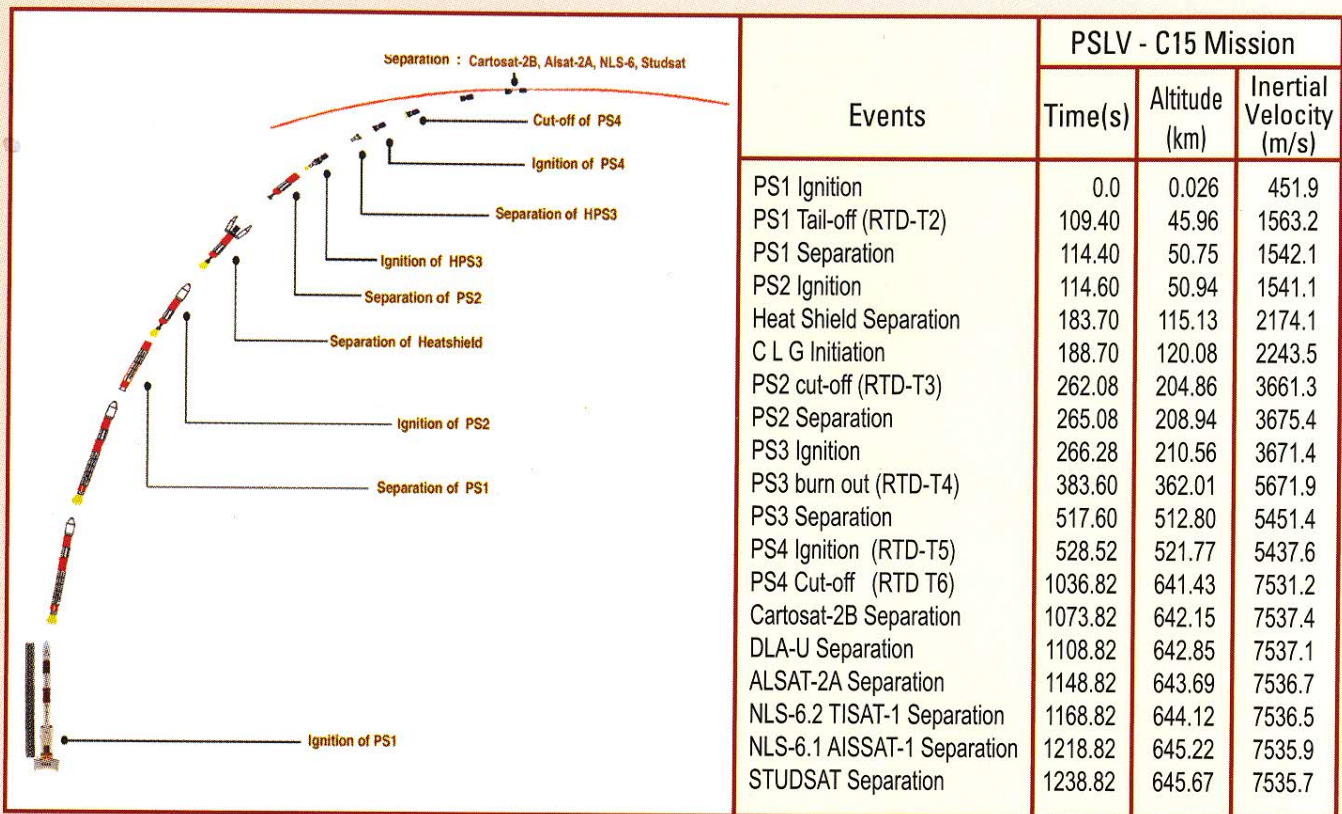


C15 - Vehicle Configuration

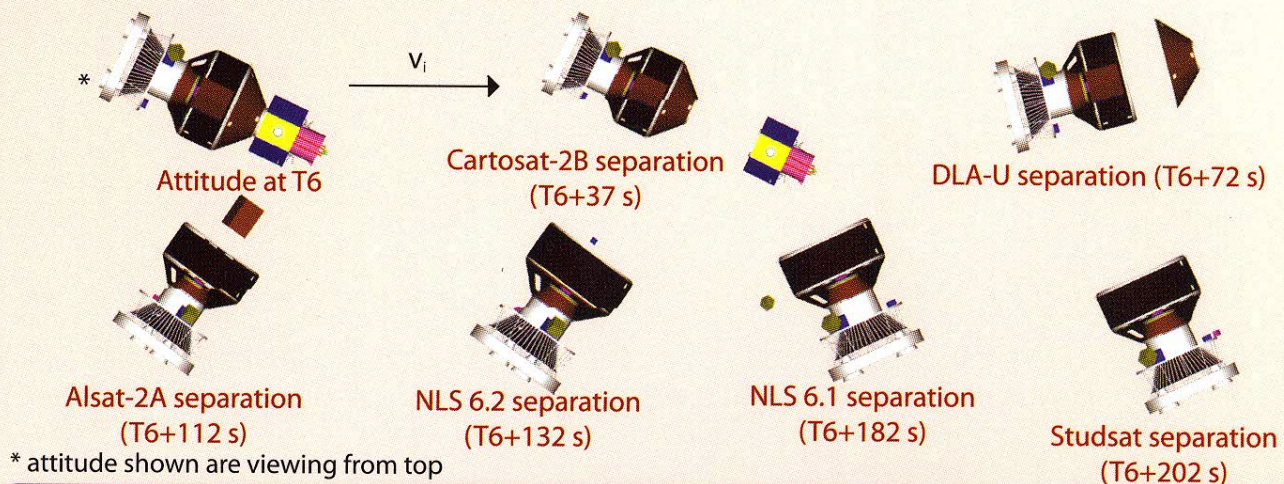


Payload Accommodation

PSLV-C15 Flight Sequence



Spacecraft Separation Sequence



Payloads

Cartosat-2B	693 kg
Alsat-2A	116 kg
NLS 6.1 (AISSat-1)	14 kg (6.5 kg for satellite)
NLS 6.2 (TISat-1)	3 kg (1 kg for satellite)
Studsat	3.6 kg (1.3 kg for satellite)

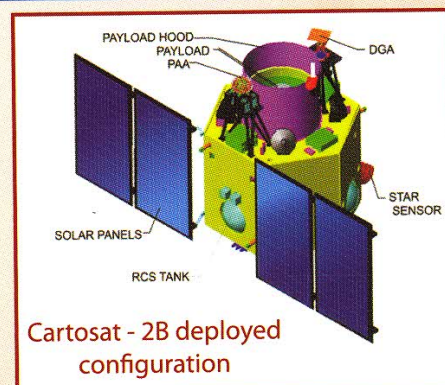
Cartosat-2B

Cartosat-2B is the third satellite in Cartosat-2 series.

Mission Objectives

- ▶ Obtaining high resolution (~ 1 m) scene specific spot imageries
- ▶ Generating cartographic products at cadastral level for urban and rural development

- Carries Panchromatic Camera with two mirror on axis system
- Relay optics operating in step & stare mode
- Three axes stabilized for sun pointing and imaging mode of operation
- Positioned at 630 km (mean) SSPO with 09.30 hrs ECT for 4 days revisit and one time special orbit at 560 km (recurrent , for daily revisit)
- ± 26 deg steering across-track nominally for different modes of imaging



Alsat-2A

Alsat-2A is the first spacecraft in Alsat-2 series, an Algerian programme consisting of two similar satellites for earth observation in the low earth orbit

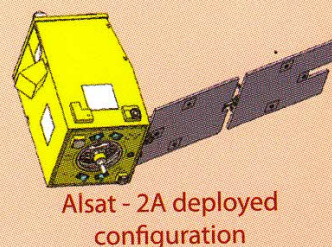
Mission Objectives

- ▶ Town and country planning
- ▶ Natural disaster forecast and monitoring
- ▶ Agricultural monitoring

The spacecraft is built by EADS Astrium.

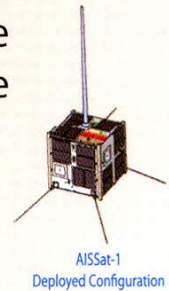
Alsat-2A is capable of imaging with a resolution of

- 2.5 m in panchromatic mode &
- 10 m in multi spectral mode (4 bands)



NLS 6.1 (AISSat-1)

AISSat-1 is a technology demonstration spacecraft built for the Norwegian Defense Research Establishment by the Space Flight Laboratory at the University of Toronto Institute for Aerospace Studies (UTIAS), Canada.



Mission objective

- ▶▶ To perform a survey of the VHF band centered on 162 MHz maritime AIS band

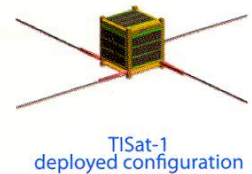
The payload is a maritime AIS (Automatic Identification System) receiver. The XPOD GNB Separation System of UTIAS is used to deploy the spacecraft in orbit.

NLS 6.2 (TISat-1)

The TISat-1 is a 1kg CubeSat of 100x100x100 mm and is built by University of Applied Sciences of Southern Switzerland (SUPSI).

Mission objectives

- ▶▶ To monitor the effect of atomic oxygen on various materials and detect man made 50Hz/60Hz light pollution on earth
- ▶▶ To test firmware for coding and modulation schemes for communication and validate redundant hardware architecture

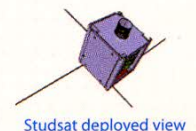


Studsat

Studsat is developed by a consortium of Engineering Colleges of India.

Mission objectives

- ▶▶ Imaging earth surface using CMOS camera with resolution of 95 m and transmitting data to earth station
- ▶▶ Developing ground support system



PRE LAUNCH OPERATIONS



CBS assembly



PS1 stage at MST



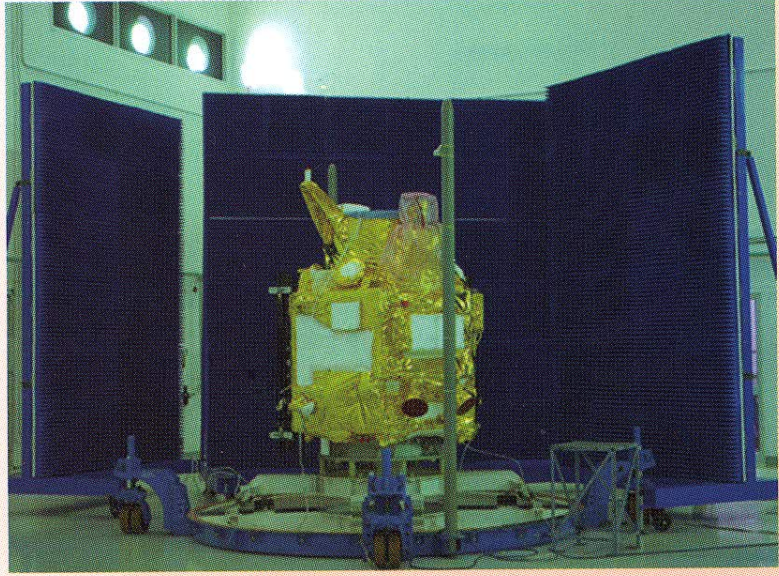
PS2 receipt at MST



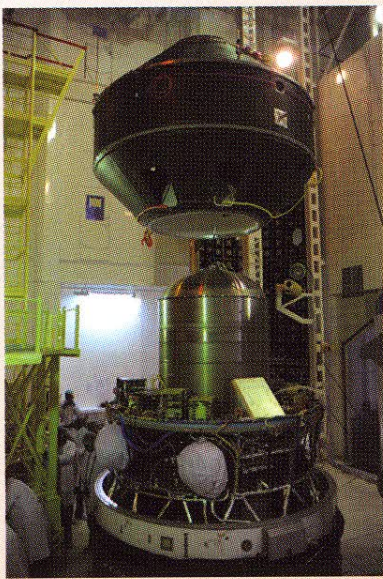
PS3-PS4 moduling



Vehicle ready to receive spacecrafts



Cartosat - 2B Testing



DLA + Alsat - 2A Module assembly to PS4



Satellites integrated to vehicle



HS closure