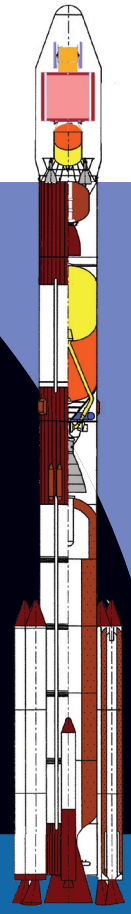

101st Launch
इसरो isro
PSLV-C61/EOS-09 MISSION
PSLV C61
INDIA
PSOM XL 4
इसरो isro
SDSC SHAR SRIHARIKOTA

PSLV-C61/EOS-09 MISSION

PSLV-C61 vehicle will carry the EOS-09 (Earth Observation Satellite-09) into a SSPO orbit. Subsequent to satellite separation, Orbit Change Thrusters (OCT) will be used to reduce the orbit altitude of the spent PS4 stage to reduce its life in orbit, followed by stage passivation. Launch is planned from First Launch Pad (FLP), SDSC, SHAR.

PSLV-C61 VEHICLE CHARACTERISTICS

Vehicle Height	44.5 m
Lift off Mass	321 t
Propulsion Stages	
First Stage	6PSOM-XL+ S139
Second Stage	PL40
Third Stage	HPS3
Fourth Stage	L2.5 (Ti)

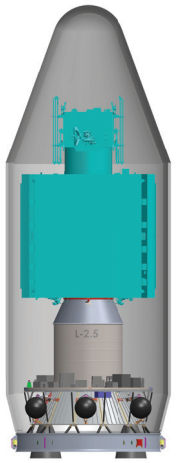


63rd PSLV Flight

27th Flight of PSLV-XL

PSLV-C61 MISSION SPECIFICATIONS

Parameters	Orbit-1 (EOS-09)	Orbit-2 (SPENT PS4)
Semi-major Axis (km)	6907.244 ± 10	6728.137
Altitude (km) (wrt.equatorial R_E of 6378.137 km)	529.107	350
Inclination (deg.)	97.515 ± 0.12	–
Eccentricity 0(e)	0 ≤ e ≤ 0.001	
Launch Azimuth	140^0	
EOS-09 Spacecraft Mass	1696.24 kg	



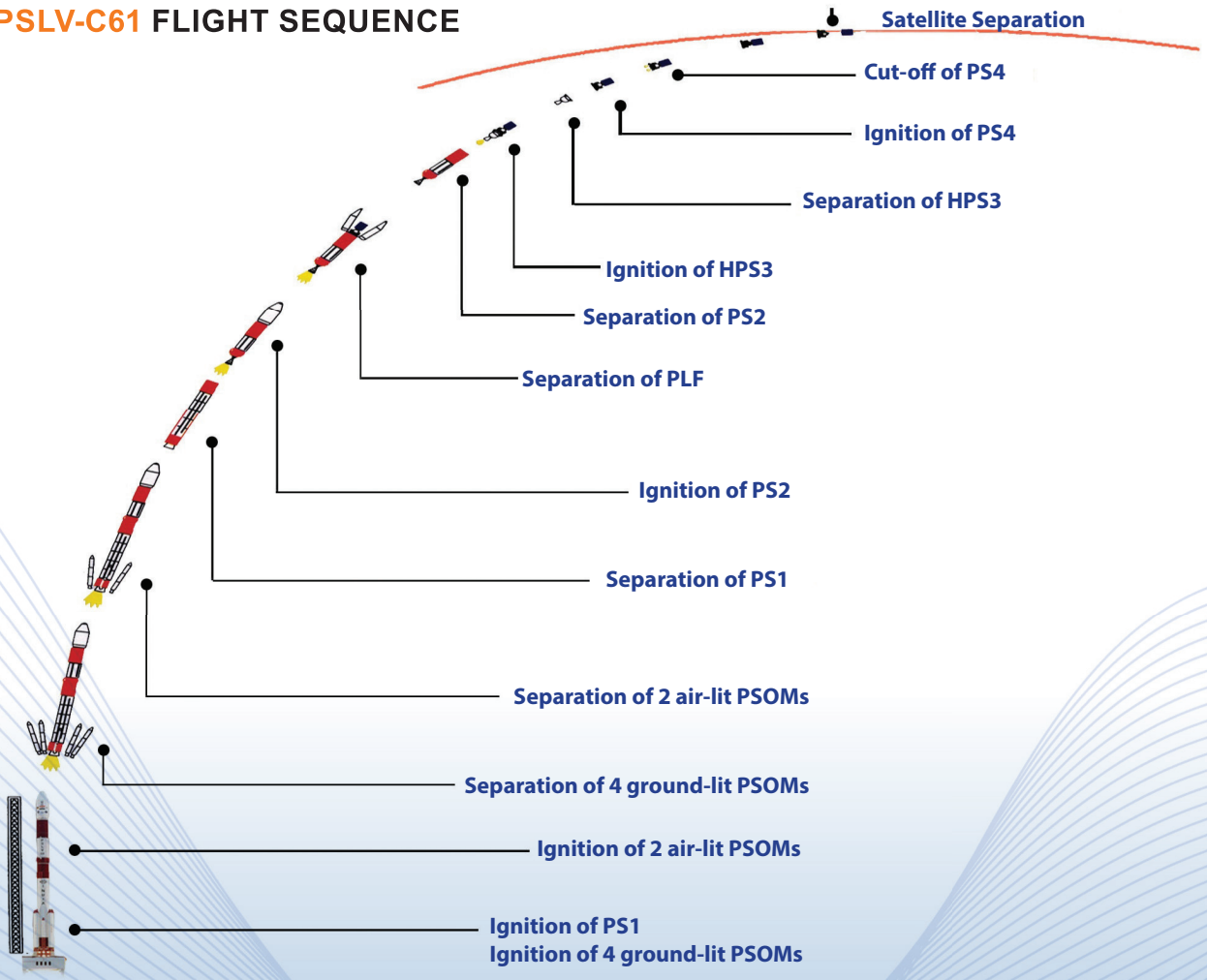
Payload Accommodation in PSLV-C61

PSLV-C61 VEHICLE CONFIGURATION (6PSOM-XL+S139+PL40+HPS3+L2.5 (Ti)

PSLV-C61 STAGES AT A GLANCE					
	Stage 1		Stage 2 (PS2)	Stage 3 (HPS3)	Stage 4 (PS4)
	PS1	PSOM-XL			
Length (m)	20	12	12.8	3.6	3.0
Diameter (m)	2.8	1	2.8	2	1.34
Propellant	Solid (HTPB based)	Solid (HTPB based)	Liquid (UH25 + N_2O_4)	Solid (HTPB based)	Liquid (MMH+MON3)
Propellant Mass (t)	139	12.2	41	7.65	2.5

PSLV-C61/EOS-09 MISSION

PSLV-C61 FLIGHT SEQUENCE



PSLV-C61 TYPICAL FLIGHT PROFILE

Event	Time (s)	Local Altitude (km)	Inertial Velocity (m/s)
RCT Ignition	-3	0.024	451.9
PS1 Ignition	0	0.024	451.9
PSOM XL 1,2 (GL) Ignition	0.42	0.024	451.9
PSOM XL 3,4 (GL) Ignition	0.62	0.024	451.9
PSOM XL 5, 6 (AL) Ignition	25.0	2.734	568.8
PSOM XL 1,2 (GL) Separation	69.9	26.356	1281.3
PSOM XL 3,4 (GL) Separation	70.1	26.511	1285.6
PSOM XL 5,6 (AL) Separation	92.0	46.710	1823.3
PS1 Separation	111.64	69.480	2141.9
PS2 Ignition	111.84	69.712	2141.0
PLF Separation	152.78	115.535	2376.9
CLG Initiation	157.78	120.938	2402.7
PS2 Separation	264.34	231.670	4034.2
PS3 Ignition	265.54	232.962	4031.3
PS3 Separation	493.00	443.841	5830.7
PS4 Ignition	503.40	450.790	5820.5
PS4 Cutoff	1012.24	533.914	7591.9
EOS-09 Separation	1059.24	534.863	7595.9
Orbit Change-1 Ignition	2231.52	550.079	7588.1
Orbit Change-1 Cut-off	2756.78	536.391	7547.9
Orbit Change-2 Start	4952.52	377.087	7733.7
Orbit Change-2 Cut-off	5462.04	361.950	7696.5
MON Passivation Start	5572.04	359.468	7697.6
MMH Passivation Start	6112.04	351.611	7700.6

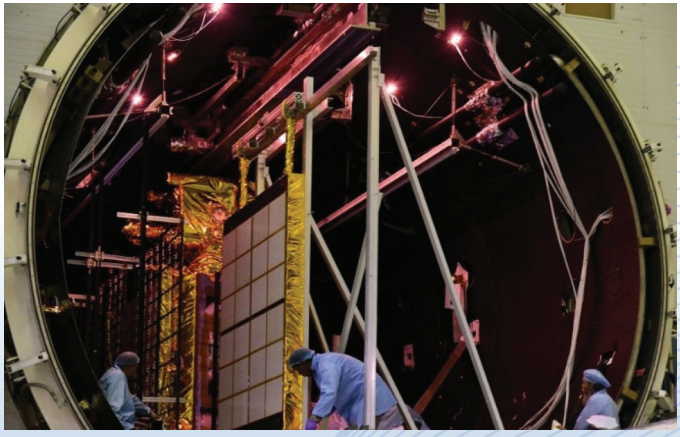
EOS-09 SPACECRAFT

EOS-09 is a repeat satellite of EOS-04, designed with the mission objective to ensuring remote sensing data for the user community engaged in operational applications and to improve the frequency of observation.

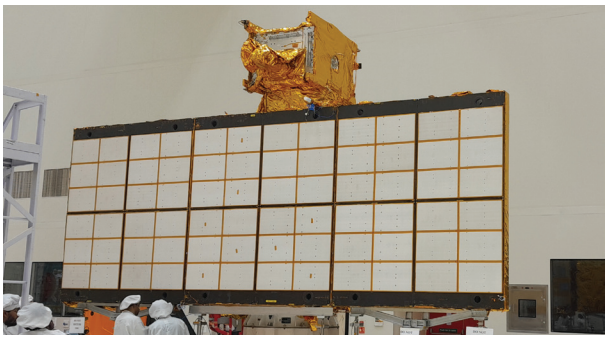
The spacecraft is configured using ISRO's RISAT-1 heritage bus, with most of the functional requirements of the SAR payload and the bus platform systems derived from the earlier ISRO missions. The mission carries a Synthetic Aperture Radar (SAR) payload capable of providing images for various earth observation application under all-weather condition.

Spacecraft Configuration	
Bus	RISAT-1 heritage bus
Payload	Synthetic Aperture Radar (SAR)
Mass	1696.24 Kgs
Power	2.4 kW
Mission Life	5 Years

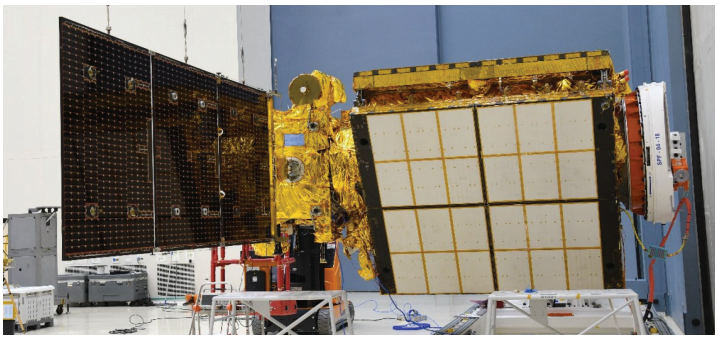
Adhering to the ISRO's commitment to the community, the spacecraft will be a debris-free mission. A sufficient amount of fuel has been reserved for de-orbiting the satellite after its effective mission life, lowering it to an orbit that ensures its decay within two years.



Spacecraft inside the thermo-vacuum chamber

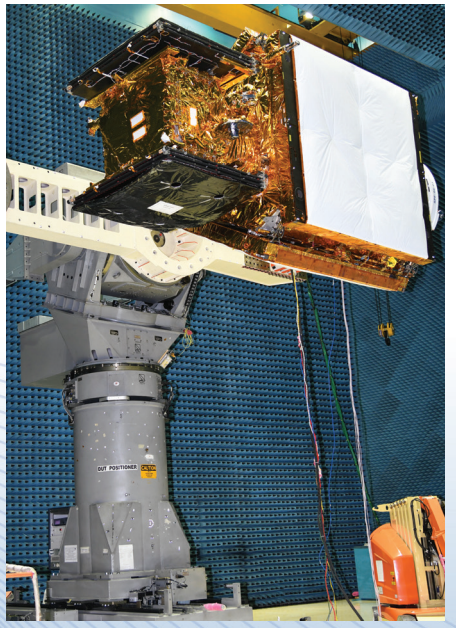


Assembly and deployment of payload antenna

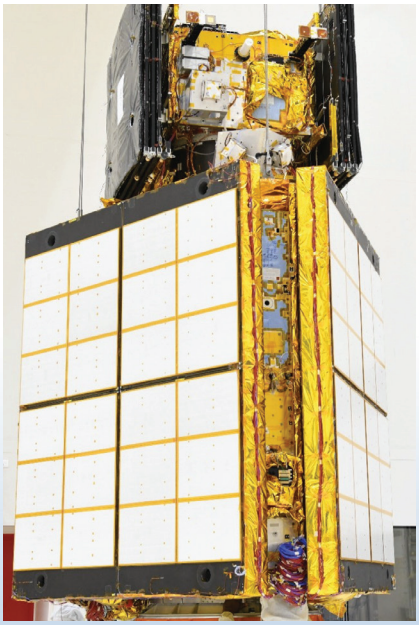


Assembly and deployment of solar panel

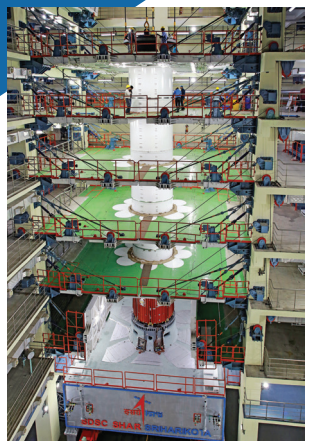
Spacecraft on vibration table

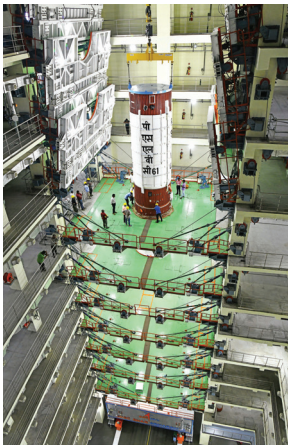
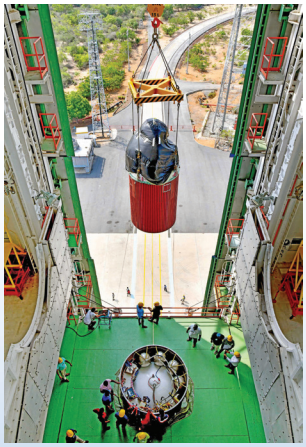


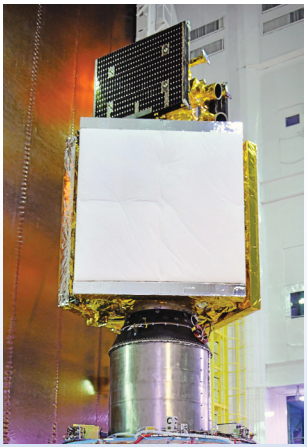
Mounted on CATF for payload performance check



Fully assembled spacecraft




Capacity Building and Public Outreach (CBPO)

Indian Space Research Organisation

Department of Space, Government of India
Antariksh Bhavan, New BEL Road
Bangalore-560094, India
Telephone: +91 80 2217 2119

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