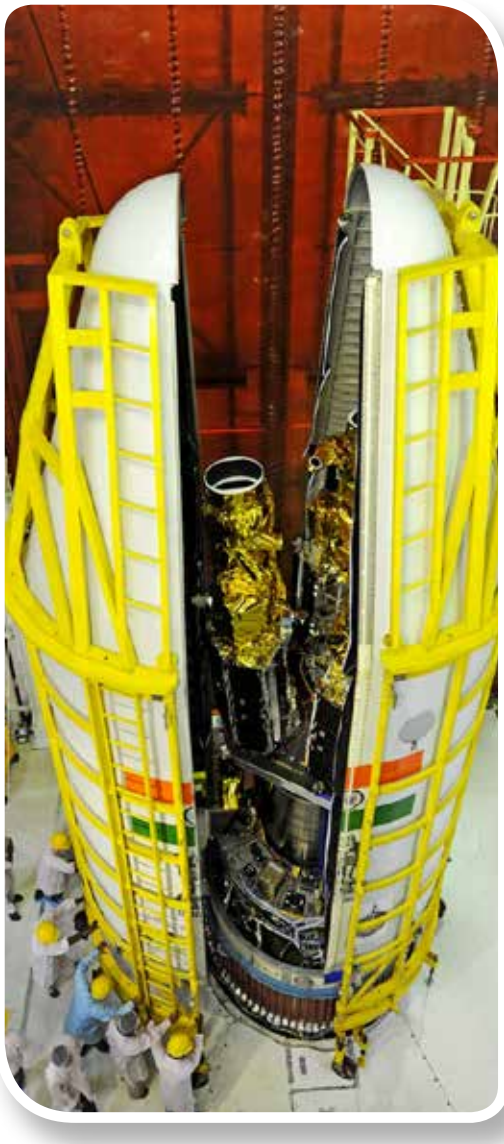
PSLV-C28 Mission

Commercial Satellite Launch

10 July, 2015

THE MISSION

PSLV-C28 carrying on-board three identical DMC3 Satellites lifted-off from the Satish Dhawan Space Centre (SDSC) SHAR, Sriharikota at 09:58 PM (IST) on July 10, 2015. The DMC3 Optical Earth Observation Satellites were successfully placed into a 647 km Sun-synchronous Orbit (SSO). The PSLV-C28, in addition to the three DMC3 satellites, also carried two auxiliary satellites from the UK. The overall mass of the satellites amounted to 1440 kg, making this mission the heaviest commercial mission ever undertaken by Antrix / ISRO. Accommodating the three DMC3 satellites each with a height of about 3 metre within the existing payload fairing of PSLV was a challenge. To mount these satellites onto the launcher, a circular Launcher Adaptor called as L-adaptor and a triangular deck called Multiple Satellite Adapter-Version 2 (MSA-V2) were newly built and designed by ISRO for this specific purpose.



PSLV-C28

THE LAUNCH VEHICLE

The PSLV-C28 in its 30th flight used the 'XL' configuration and it was the 9th flight of PSLV in 'XL' configuration.

SPECIFICATIONS

Height	44.4 m
Lift-Off Mass	320 t
No of Stages	4
Payloads	**5 International Customer Satellites** United Kingdom (5)

STAGE CHARACTERISTICS				
	Stage-1	**Stage-2**	**Stage-3**	**Stage-4**
Nomenclature	Core Stage PS1 + 6 Strap-on Motors	PS2	PS3	PS4
Propellant	Solid (HTPB based)	Liquid ($UH25 + N_2O_4$)	Solid (HTPB based)	Liquid (MMH + MON-3)
Propellant Mass (T)	138.2 (Core), 6 x 12.2 (Strap-on)	42.0	7.6	2.5
Max Thrust (kN)	4819 (Core), 6 x 716 (Strap-on)	804	240	7.3 x 2
Stage Dia (m)	2.8 (Core), 1 (Strap-on)	2.8	2.0	1.3
Stage Length (m)	20 (Core), 12 (Strap-on)	12.8	3.6	3.0

THE INTERNATIONAL CUSTOMER SATELLITES

DMC3

THE SATELLITE

The DMC3 constellation comprised of three advanced mini-satellites DMC3-1, DMC3-2 and DMC3-3. The satellites are designed to address the need for simultaneous high spatial resolution and high temporal resolution optical Earth Observation. They were launched into single Low Earth Orbit plane and phased with a separation of 120° between them; these satellites can image any target on the Earth's surface everyday. The major applications areas include surveying the resources on Earth and its environment, managing urban infrastructure and monitoring disasters.

The two auxiliary satellites were CBNT-1, a technology demonstrator Earth Observation Microsatellite weighing 91 kg, and De-OrbitSail, a technology demonstrator Nanosatellite weighing 7 kg.

SPECIFICATIONS

Weight	447 kg
Power	230 W peak BOL, Li-Ion 480 Whr
Stabilisation	3-axis stabilised, Wheels, Star Trackers, Magnetometers, Sun Sensors, Torque Rods.
Type of Satellite	Earth Observation
Payloads	High Resolution Imager
Mission Life	7 Years