

TeLEOS-2 and Lumelite-4

April 24, 2023

In news– The Indian Space Research Organisation (ISRO) has successfully launched its PSLV-C55/TeLEOS-2 mission, sending two Singapore-made satellites into the space.

About the mission-

- Of the two satellites, TeLEOS-2 is the primary one, and Lumelite-4, the 'co-passenger.' These weight about 741 kg and 16 kg respectively.
- It is a 'dedicated commercial' mission undertaken by ISRO through NewSpace India Limited (NSIL), the space agency's commercial arm.
- The mission has the **PSLV Orbital Experimental Module (POEM)**, where the spent PS4 stage of the launch vehicle would be utilized as an orbital platform to carryout scientific experiments through non-separating payloads.
- The mission also marks the 57th flight of the Polar Satellite Launch Vehicle (PSLV). The rocket will place the two satellites into an eastward inclination orbit.

TeLEOS-2-

- TeLEOS-2 has been developed **under a partnership between the DSTA (representing the Government of Singapore) and Singapore Technologies Engineering Limited.**
- **TeLEOS-2 carries a Synthetic Aperture Radar (SAR) payload.**
- It will be able to provide **all-weather day and night coverage**, and capable of imaging at 1m full-polarimetric resolution.
- Once deployed and operational, **it will support the satellite imagery requirements of various agencies under the Government of Singapore.**

Lumelite-4

- The LUMELITE-4 satellite is **co-developed by the Institute for Infocomm Research (I2R) of A*STAR and Satellite Technology and Research Centre (STAR)** of the National University of Singapore.
- It is an **advanced 12U satellite developed for the technological demonstration** of the High-Performance Space-borne VHF Data Exchange System (VDES).
- Using the VDES communication payload developed by I2R and STAR's scalable satellite bus platform, it **aims to augment Singapore's e-navigation maritime safety and benefit the global shipping community.**

POEM-2-

As a part of POEM-2 (PSLV Orbital Experimental Module), **there are 7 experimental non-separable payloads:**

- PiLOT (PSLV In orbital Obc and Thermals) a OBC package from IIST;
- ARIS-2 (Advanced Retarding Potential analyser for Ionospheric Studies) experiment from IIST;
- HET based ARKA200 Electric Propulsion System from Bellatrix;
- DSOD-3U and DSOD-6U deployer units along with DSOL-Transceiver in S- & X- bands from Dhruva Space; and
- Strawberry Sense Payload from Indian Institute of Astrophysics (IAP).