2. TeLEOS-2

Why in News?

- The Indian Space Research Organisation (ISRO) is going to launch Singapore's TeLEOS-2 satellite from the Satish Dhawan Space Centre in Sriharikota.

Highlights

- TeLEOS-2 is a Earth Observation Satellite weighing 741 kg and has synthetic aperture radar capable of providing data in 1-meter resolution.
- It Is equipped with a high-resolution camera that can capture images with a ground resolution of up to one meter
- The launch will be carried out by the Polar Satellite Launch Vehicle (PSLV) of ISRO.
- This is a dedicated commercial mission through NSIL with TeLEOS-2 as primary satellite and Lumelite-4 as a co-passenger satellite.
- The primary objective of TeLEOS-2 is to provide high-resolution imagery of the Earth's surface for various applications, including urban planning, disaster management, maritime safety, and environmental monitoring.
- The satellite is also expected to support Singapore's Smart Nation initiative, which aims to harness technology to improve the quality of life for citizens.
- PSLV is a highly capable third generation launch vehicle developed by ISRO. It is often referred to as the "Workhorse of ISRO" due to its consistent performance over the years.

The PSLV features four stages:

- The first stage utilizes a solid rocket motor augmented by six solid strap-on boosters.
- The second stage is powered by an Earth storable liquid rocket engine called the Vikas engine, developed by the Liquid Propulsion Systems Centre.
- The third stage is a solid rocket motor that provides high thrust for the upper stages after the launch vehicle clears the Earth's atmosphere.
- Finally, the uppermost stage of the PSLV is equipped with two Earth-storable liquid engines.
- It is the first Indian launch vehicle to be equipped with liquid stages.
- It successfully launched two spacecraft – Chandrayaan-1 in 2008 and Mars Orbiter Spacecraft in 2013 – that later travelled to Moon and Mars respectively.