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1. **RISAT-2BR1**

Why in News?

Recently, Polar Satellite Launch Vehicle (PSLV), in its **50th flight (PSLV-C48)**, successfully launched **RISAT-2BR1** from Satish Dhawan Space Centre (SDSC) SHAR, Sriharikota.

- PSLV-C48 also injected nine commercial satellites of Israel, Italy, Japan and USA into their designated orbit.
- These satellites were launched under commercial arrangements with **New Space India Limited (NSIL).**
- PSLV-C48 was the **75th launch vehicle mission** from SDSC SHAR, Sriharikota.

About RISAT-2BR1

- RISAT-2BR1 is a **radar imaging earth observation satellite** weighing about 628 kg.
- The satellite will provide services in the field of:
  - Agriculture
  - Forestry
  - Disaster Management.
- The mission life of RISAT-2BR1 is 5 years.

RISAT Series Satellites

- Radar Imaging Satellite or RISAT is a series of Indian **radar imaging reconnaissance satellites** built by ISRO.
- India had in April 2009 launched **RISAT-2,** the first of the series to reach orbit.
  - It was bought from Israel largely for surveillance purposes.
  - This satellite enhanced ISRO's capability for disaster management applications.
- In 2012, ISRO launched what was India's first indigenous **all-weather radar imaging satellite,** known as **RISAT-1.**
  - The satellite provides all-weather surveillance using synthetic aperture radar (SAR).

About PSLV

- Polar Satellite Launch Vehicle (PSLV) is the **third generation indigenously-developed** launch vehicle of India.
- It is the first Indian launch vehicle to be **equipped with liquid stages.**
  - PSLV's first stage and third stage are solid-fuelled stages.
  - PSLV's second stage and fourth stage are liquid-fuelled stages.

- PSLV is known as the **workhorse of ISRO** for consistently delivering various satellites to Low Earth Orbits, particularly the **IRS (Indian Remote Sensing)** series of satellites.
    - The Geosynchronous Satellite Launch Vehicle (GSLV) is designed mainly to deliver the **communication satellites** to the **highly elliptical Geosynchronous Transfer Orbit (GTO).**
    - GSLV has a much higher payload capacity than PSLV.
    - GSLV uses cryogenic fuel while PSLV doesn't use it.
- PSLV successfully **launched two spacecraft:**
    - Chandrayaan-1 in 2008
    - Mars Orbiter Spacecraft in 2013.
- It can **fly in different configurations** depending on the mass of its payload and the target orbit.
- It comes in various variants: **PSLV-C (PSLV Core Alone), PSLV-DL, PSLV-QL and PSLV-XL**
- PSLV has gained credence as a small satellite launcher due its numerous multi-satellite deployment campaigns with auxiliary payloads usually ride sharing along an Indian primary payload.
- Another notable feature was launch of **PSLV C37** in 2017, successfully **deploying 104 satellites in sun-synchronous orbit.**

To Watch the Video on YouTube,
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