GSAT-7R (CMS-03)

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Why in news?

The Indian Space Research Organisation (ISRO) has successfully launched the Indian Navy's advanced communication satellite GSAT-7R (CMS-03) from the Satish Dhawan Space Centre in Sriharikota.

- It is the ***indigenously designed & developed***, multi-band communication satellite for Indian Navy.
- **Purpose –** It will provide telecommunication coverage across the Indian Ocean region between the Navy's ships, submarines, aircraft, and Maritime Operations Centres.
- **Operator – Indian Navy.**

Key Features

- **Weight –** About 4,400 kg, India's **heaviest** communication satellite to date launched to GTO from Indian soil.
- **Launch vehicle –** Launch Vehicle Mark 3 (LVM3).
- **Orbit –** Geosynchronous Transfer Orbit (GTO).
- **Mission life -** ~12–15 years.
- **Replacement –** GSAT-7R is a replacement and upgrade for the existing GSAT-7 (Rukmini) satellite, which was nearing the end of its operational life.
- **Equipped with – *State-of-the-art indigenous components***, carried Ku-band, S-band, C-band and ultra-high frequency band transponders capable of supporting voice, data, and video links over multiple communication bands.
- **Alings with –** India's Aatmanirbhar Bharat vision, enabling the armed forces to operate with enhanced situational awareness and secure, high-capacity communication links in complex maritime environments.
- **Preparing for Gaganyaan –**

- Recent launch showcased the LVM3 rocket's ability to carry satellites over 4 tonnes to GTO, this reduces India's reliance on foreign launchers for heavy communication satellites.
- It also ***supports ISRO's Gaganyaan mission*** by validating the LVM3 platform, which will be evolved for India's first human spaceflight.

India's previous heavy satellites were the 5,854-kg GSAT 11 & 4,181-kg GSAT-24 were launched by Ariane space & The GSAT-20, 4,700-kg satellite by SpaceX.

References

1. The Hindu | ISRO has successfully the GSAT-7R satellite
2. ISRO | LVM3-M5/CMS-03 MISSION