



drishti

New Satellites to Help Gaganyaan Crew

 drishtiias.com/printpdf/new-satellites-to-help-gaganyaan-crew

Why in News

India is planning to put up a new satellite series called the **Indian Data Relay Satellite System (IDRSS)**.

The IDRSS is planned to track and be constantly in touch with Indian satellites, mainly with those in **low-earth orbits (LEO)** having limited coverage of earth.

Key Points

- It will play a crucial role in **helping Indian Space Research Organisation (ISRO)** with its advanced LEO missions such as space docking, space station and distant expeditions to the Moon, Mars etc.
- It will also be useful in **monitoring launches**.
- IDRSS satellites of the 2,000 kg class would be launched on the **Geosynchronous Satellite Launch Vehicle (GSLV) launcher to geostationary orbits** around 36,000 km away. A satellite in **Geosynchronous Equatorial Orbit (GEO)** covers a third of the earth and therefore three of them can provide total coverage.
- Crew members of the **Gaganyaan mission** of 2022 will be the first ones to benefit from the IDRSS by staying with mission control fully and continuously throughout the travel.

- **Background**

- At present, in the absence of a data relay satellite system, spacecraft are not visible all the time.
- The scientists have **already started working on two IDRSS satellites** planned initially.
- The **first** will be sent towards the **end of 2020**. It will precede the pre-Gaganyaan experimental unmanned space flight.
- The **second** one will follow **in 2021**.
- Both satellites will offer near-total tracking, sending and receiving of information from the crew 24/7.

- **Global Scenario**

- The **U.S. and Russia** started relay satellite systems in the late 1970s and 80s. These are being used to monitor the space stations **Mir and the International Space Station**, trips made to them and to monitor the **Hubble Space Telescope**, as well.
- Currently, the **U.S.** is putting up its third-generation advanced fleet of **Tracking & Data Relay Satellites (TDRS)**.
- **Russia** has its **Satellite Data Relay Network**.
- **Europe** is building its own **European Data Relay System**.
- **China** is into its **second generation Tianlian II** series.

Mir: It was a space station operated by the Soviet Union and later by Russia in low Earth orbit from 1986 to 2001. Mir was the first modular space station.

Source: TH