



Gaganyaan Mission

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Why in News

Recently, the Union Minister of Science and Technology informed that the human spaceflight module of **Gaganyaan** will be launched after the **second unmanned mission planned in 2022-23**.

- It was initially envisaged that the Rs. 10,000 crore **Gaganyaan mission** aims to send a three-member crew to space for five to seven days by 2022 when India completes 75 years of independence.

First **unmanned mission is planned in December 2021**.

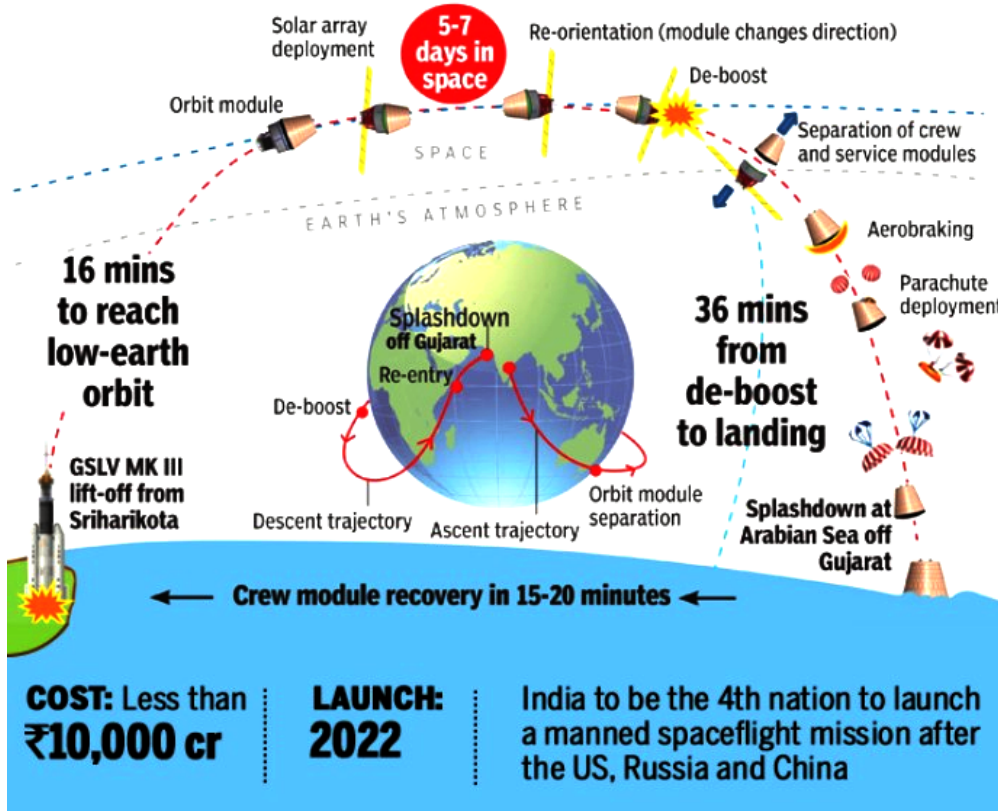
- It has been delayed due to the **Covid-19** induced **lockdown**.

Key Points

About:

- Gaganyaan is a mission by the **Indian Space Research Organisation (ISRO)**.
- Under the Gaganyaan schedule:
 - Three flights will be sent into orbit.
 - There will be two unmanned flights and one human spaceflight.
- The Gaganyaan system module, called the **Orbital Module will have three Indian astronauts, including a woman**.
- It will circle Earth at a **low-earth-orbit** at an altitude of 300-400 km from earth for 5-7 days.

MANNED MISSION



- **Payloads:**

- The payload will consist of:
 - **Crew module** - spacecraft carrying human beings.
 - **Service module** - powered by two liquid propellant engines.
- It will be equipped with emergency escape and emergency mission abort.

- **Launch:**

GSLV Mk III, also called the **LVM-3 (Launch Vehicle Mark-3)**, the three-stage heavy lift launch vehicle, will be used to launch Gaganyaan as it has the necessary payload capability.

- **Training in Russia:**

In June 2019, the **Human Space Flight Centre of the ISRO and the Russian government-owned Glavkosmos** signed a contract for the training, which includes Russian support in the selection of candidates, their medical examination, and space training.

- The **candidates will study in detail the systems of the Soyuz** manned spaceship, as well as be trained in short-term weightlessness mode aboard the **Il-76MDK aircraft**.
- The **Soyuz is a Russian spacecraft**. The Soyuz carries people and supplies to and from the space station.
- The **Il-76MDK** is a military transport plane specially designed for parabolic flights of trainee astronauts and space tourists.

- **Significance:**

- It will help in **enhancement of science and technology levels** in the country and **help inspire youth**.

Gaganyaan will involve numerous agencies, laboratories, disciplines, industries and departments.

- It will help in **improvement of industrial growth**.

Recently, the Government has announced a new organisation, **IN-SPACe**, part of reforms **to increase private participation in the space sector**.

- It will help in **development of technology for social benefits**.

- It will help in **improving international collaboration**.

One **International Space Station (ISS)** put up by multiple countries may not be enough. Regional ecosystems will be needed and Gaganyaan **will focus on regional needs: food, water and energy security**.

- **India's Other Upcoming Projects:**

- **Chandrayaan-3 Mission:** India has planned a new moon mission named **Chandrayaan-3**. It is likely to be launched in early 2021.
- **Shukrayaan Mission:** The ISRO is also planning **a mission to Venus**, tentatively called Shukrayaan.

Source:IE