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**News: Vyommitra**

- Recently, the Ministry of Science & Technology announced that woman robot astronaut “Vyommitra” will fly into Space ahead of Indian Space Research Organisation's (ISRO) ambitious “Gaganyaan" mission, which will be India’s first human manned Space Flight carrying Indian Astronauts into Space.

**Vyom Mitra**

- Vyom Mitra is a half-humanoid and her body stops at the torso and has no legs.
- She is capable of switching panel operations, performing Environment Control and Life Support Systems (ECLSS) functions, conversations with the astronauts, recognizing them and solving their queries.
- She will simulate the human functions required for space before real astronauts take off in August 2022.
- The humanoid has been developed in ISRO Inertial Systems Unit, Thiruvananthapuram.
- Over the past few months, the IISU has successfully integrated it with a computer “brain”, which enables it to “read” control panels aboard the unmanned test flights and communicate with the ISRO ground stations.

- The AI enabled robot is designed to fly aboard a rocket, withstanding vibrations and shock during the flight.
- Meanwhile, Vyommitra is set to get a digital twin. The “twin” will undergo computer simulations where the control systems are tested for microgravity conditions.
- The twin will be developed in collaboration with academic institutions such as the IITs.

## Gaganyaan Mission

- Gaganyaan is the 10,000 crore Indian Human Space flight scheduled by 2022.
- Gaganyaan Mission will demonstrate Indian Human Spaceflight capability to low earth orbit for a mission duration ranging from one orbital period to a maximum of seven days.
- GSLV Mk-III will be used to carry the orbital module which will have necessary provisions for sustaining a 3-member crew for the duration of the mission.
- It is designed to have 3-7 crew members who'll spend 3-7 days in space in a 400km orbit.
- First of 2 pre-Gaganyaan flights will be with a humanoid (A lady robot named Vyom mitra).

- The programme will make India the **fourth nation in the world** to launch a Human Spaceflight Mission. So far, only the **USA, Russia and China have launched human spaceflight missions**.
- ISRO has already constituted an advisory committee for Gaganyaan and has identified 4 astronauts and their training has commenced in Russia.
- ISRO and Russian federal space agency (ROSCOSMOS) have signed a memorandum of Understanding (MoU) to work together for India's 1<sup>st</sup> manned space mission.
- ROSCOSMOS has also offered ride to Indian astronaut short visit to International Space Station on board Soyuz spacecraft for short training mission.
- Recently, ISRO **has successfully conducted the third long duration hot test of the liquid propellant Vikas Engine** for the core L110 liquid stage of the human rated GSLV Mk III vehicle, as part of the engine qualification requirements for the Gaganyaan Programme.