

What is NVS-01?

May 23, 2023 • vajiramandravi.com



Why in news?

- The GSLV-F12/NVS-01 mission is designed to **deploy the NVS-01 navigation satellite into a geosynchronous transfer orbit (GTO).**

About NVS-01:

- It is the **first in the series of second-generation navigation satellites built by ISRO's UR Rao Satellite Centre in Bengaluru.**
- **At present, India uses its Navigation with Indian Constellation (NavIC)** series of satellites for civilian and defence navigation in the Indian mainland and even 1500 kms beyond India's borders.
- **NVS series of satellites will sustain and augment the NavIC** with enhanced features.

- This series **incorporates L1 band signals** additionally to widen the services.
- **For the first time, an indigenous atomic clock** will be flown in NVS-01.

What is Navigation with Indian Constellation (NavIC):

- It is a **regional navigation satellite system** established **by the ISRO to meet** the positioning, navigation and timing **requirements of the nation**.
- NavIC was **erstwhile** known as **Indian Regional Navigation Satellite System (IRNSS)**.
- It is a **constellation of seven satellites** that work with a 24X7 network of ground stations while orbiting above Earth.
- **Three satellites are placed in geostationary orbit and four in inclined geosynchronous orbit.**
- **Coverage:** The NavIC coverage area includes **India and a region up to 1,500km beyond the nation's boundary.**
- **Services offered:**
 - It offers **two services — Standard Position Service for civilian users and Restricted Service for strategic users.**
 - The system is **used in terrestrial, aerial, marine transportation**, location-based services, personal mobility, resource monitoring, surveying and geodesy, scientific research etc.

What is Geosynchronous Transfer Orbit (GTO)?

- To attain geosynchronous (and also geostationary) Earth orbits, **a spacecraft is first launched into an elliptical GTO.**
- There on, **the satellite will independently use its onboard propulsion systems to perform orbit-raising manoeuvres and reach its intended orbit.**

Q1) What is Geosynchronous Transfer Orbit (GTO)?

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Source: [ISRO To Launch NVS-01 Navigation Satellite On May 29](#)

Source: <https://vajiramandravi.com/current-affairs/what-is-nvs-01/>

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