

6. Earth Observation Satellites (EOS)

Prelims Syllabus: S&T

Mains Syllabus: GS: III Awareness In The Fields Of It, Space, Computers, Robotics, Nano-Technology, Bio-Technology, Pharma Sector & Health Science

Why in News?

- After a disappointing 2021 which saw just one successful launch, ISRO is getting back to business with the EOS-04, an earth observation satellite.

What are EOS?

- An EOS or Earth remote sensing satellite is a satellite used or designed for Earth observation (EO) from orbit.
- It includes spy satellites and similar ones intended for non-military uses such as Environmental Monitoring, meteorology, cartography and others.
- The most common type are Earth-imaging satellites that take satellite images, analogous to aerial photographs.
- Some EOS may perform remote sensing without forming pictures, such as in GNSS radio occultation.

What is EOS-04 all about?

- The EOS-04 is fourth in a series of earth observation satellites that are being launched under a new generic name.
- It is designed to provide high-quality images for applications such as agriculture, forestry and plantations, flood mapping, soil moisture and hydrology.
- It will complement the data from Resourcesat, Cartosat and RISAT-2B series of satellites that are already in orbit.

Why such Different Nomenclature?

- Two years ago, ISRO had moved to a new naming system for its earth observation satellites which till then had been named thematically, according to the purpose they were meant for. The Cartosat series of satellites were meant to provide data for land topography and mapping, while the Oceansat satellites were meant for observations over sea.
- Some INSAT-series, Resourcesat series, GISAT, Scatsat, and a few other earth observation satellites were named differently for the specific jobs they were assigned to do, or the different instruments that they.

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- All these would now become part of the new EOS series of satellites.

What other Satellites are being launched?

- Besides EOS-04, two other small satellites —INSPIRESat-1 and INS-2TD — will ride on the heaviest version of the PSLV rocket in the early hours from the Sriharikota launch range.
- The other co-passenger, INS-2TD, is a technology demonstrator for the first India-Bhutan joint satellite that is scheduled to be launched next month.
- The two countries had signed a space agreement last year, and its first outcome would be the launch of Bhutan-Sat, or INS-2B, on a PSLV rocket.

How many satellites does India have in Space?

- India currently has 53 operational satellites, of which 21 are earth observation ones and another 21 are communication-based.
- EOS-4 launch would be the 54th flight of the PSLV rocket, and the 23rd of its most powerful XL-version that has six strap-on boosters.

