GSAT-29 Launch - GSLV Mk III D2

Why in news?

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ISRO successfully launched GSAT-29 communication satellite on board GSLV-Mk III D2 from the Satish Dhawan Space Centre at Sriharikota.

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What are the key features of GSAT-29?

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- With a mission life of 10 years, GSAT-29 is the 33rd communication satellite built by ISRO.
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- GSAT-29 is a multi-beam, multiband communication satellite.
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- Its payloads are designed to mainly focus on connectivity to the users in the hilly and geographically inaccessible areas.
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- Weighing 3,423 kg at lift-off, GSAT-29 is the heaviest satellite to be launched from India.
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- It will be placed in a geostationary transfer orbit.
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- At its closest point it will be 190 km above the Earth, and at its farthest it will be close to 36,000 km above the Earth.
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- GSAT-29 also carries a Geo High-Resolution Camera to aid in high-resolution imaging.
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- For the first time, an optical communication payload will be utilised for data transmission at a very high rate.
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- ISRO’s Master Control facility at Hassan, Karnataka takes over the command and control of GSAT-29 soon after its separation from GSLV Mk III - D2.
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- It will be manoeuvred into a geostationary orbit, its final destination, in days.

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- Once placed, the satellite’s solar panels and antennae will unfold and work will begin.
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- **GSLV MK III** - The Geosynchronous Satellite Launch Vehicle Mark III is a three-stage heavy lift launch vehicle, weighing 640 tonnes.
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- The first stage has two boosters with solid propellant, and the second is the core with liquid propellant.
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- The cryogenic engine forms the final stage.
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- The GSLV Mk III is the heaviest launch vehicle made in India.
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What is the significance?

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- The GSLV-GSAT launch enhances India’s capacity to meet its communication needs.
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- Both launcher and satellite have certain characteristics that make them unique.
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- The launcher can carry payloads up to 4 tonnes to the geosynchronous transfer orbit and up to 10 tonnes to a low-earth orbit.
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- The launch shows that ISRO has developed the capability to lift four-tonne payloads using its new GSLV Mark -III rocket.
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- The GSLV-III is also likely to be used in the Chandrayaan-II mission in the early months of 2019.
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- The multi-band, multi-beam satellite can cater to the communication needs of people in Jammu and Kashmir and the Northeast.
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- **GSLV MK III** - The first successful experimental flight of the GSLV Mk III was in 2014 when it carried a dummy crew module as a payload.
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- Its first developmental flight was on June 5, 2017, when it launched GSAT19, weighing 3,136 kg.
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- The present launch marked the second developmental flight (D2) of the Mk III.
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- With these two successes, the developmental phase of the GSLV Mk III vehicle programme will be complete.
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- The launcher is declared ‘operational’ and joins the ranks of the working vehicles, the PSLV and the GSLV.
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- This is far fewer than the number of developmental flights the older launch vehicles were subjected to.
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- It sets the stage for trying out variations such as other types of engines, different fuel combinations and higher launch capacities.
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- The GSLV Mk III has also restored morale at ISRO, which had been dented by the GSAT 6A setback.
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Source: The Hindu, Business Standard

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