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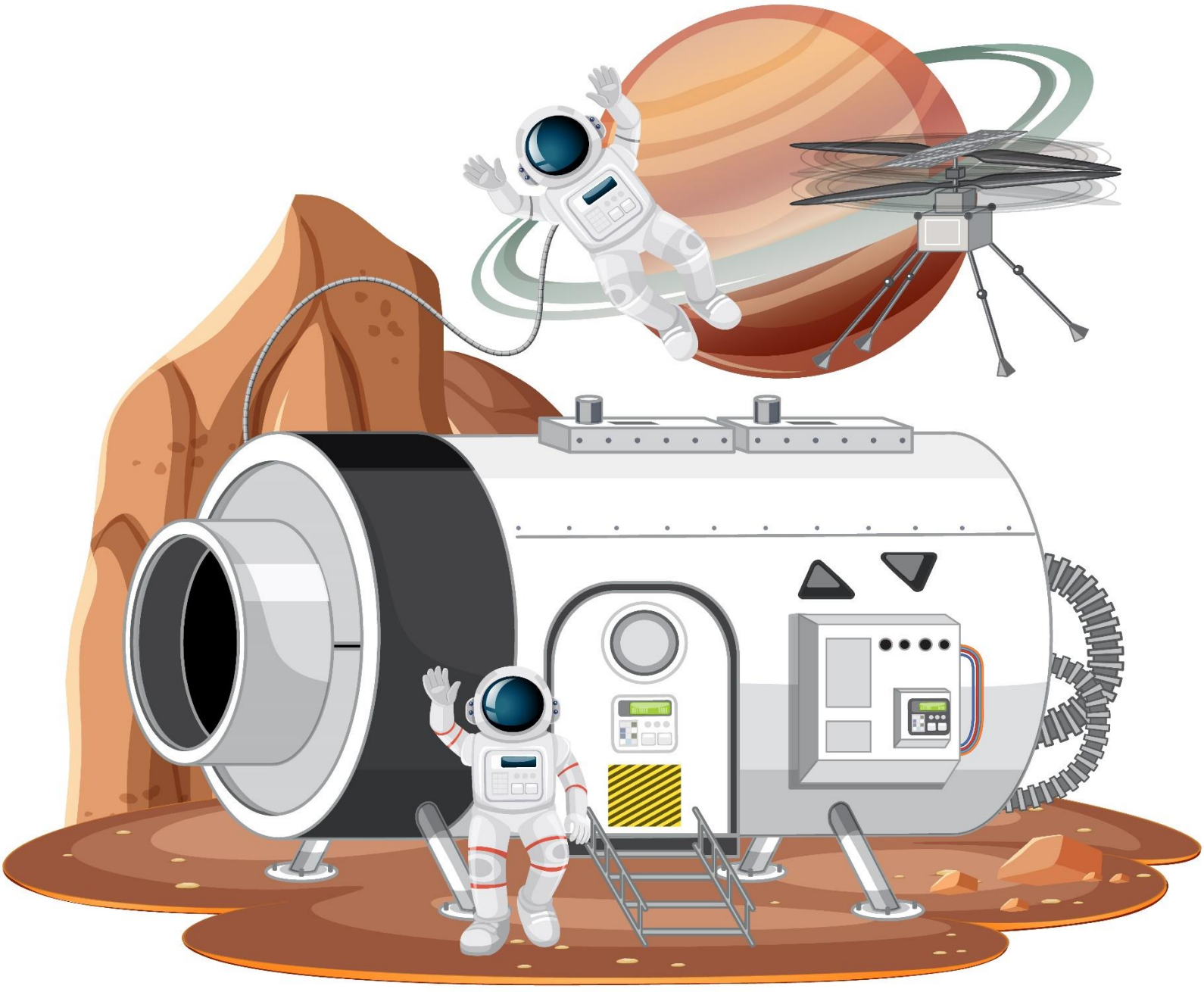


SPACE AND AEROSPACE LAW

Newsletter

INTRODUCTION

"Indian Space Economy is set to reach US$13 Billion by 2025"

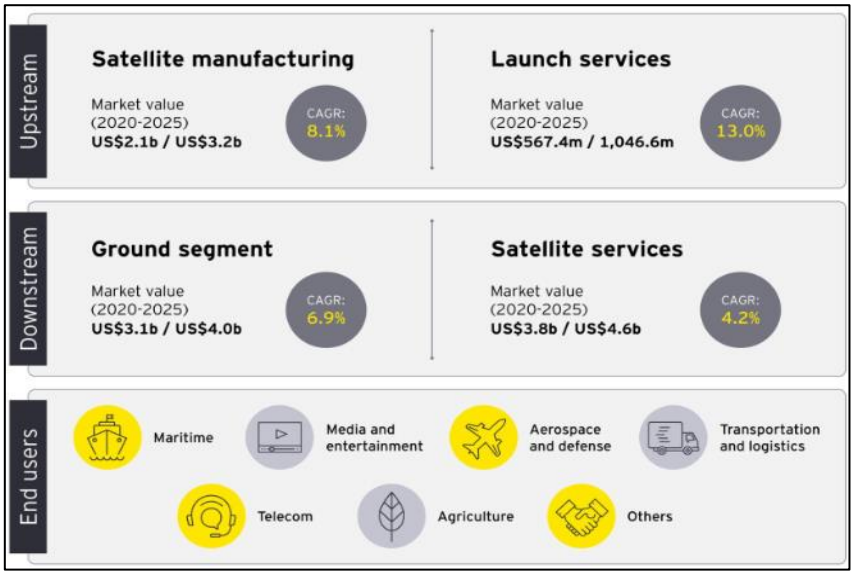
The Indian space sector is recognized for building cost-effective satellites with launch of the Mars probes successfully at first attempt and taking hundreds of foreign satellites to space. India constitutes 2-3% of the global space economy and is expected to enhance its share to more than 10% by 2030. Satellite services and application segment would form the largest share of the space economy, accounting for 36% of the total revenue by 2025.

SECTOR SPECIFICS:

- **Satellite Manufacturing:**
  There are collaborations between government agencies and private parties for manufacturing parts of satellites and their launchers; for instance, PSLV-C53 is the first official public –private collaboration for a space launcher in India.

- **Satellite Launches:** The Indian Space Program under ISRO has achieved many considerable feats and has established India's name in the global picture as a provider of reliable and cost-effective space solutions.

- **Launch Missions**: With the Mars Orbiter Mission or the Mangalyaan 2013, Indian became the 1st nation to reach Martian orbit in its first attempt. By the end of 2024, India is also launching the Gaganyaan, India's Human Spaceflight Mission aiming to launch India's first crewed flight into space.



- **Satellite Launch Services:** Indian Space and Research Organization (ISRO) provides launch facilities for private and foreign organizations.

  - India has two operational launchers: Polar Satellite Launch Vehicle (PSLV) and Geosynchronous Satellite Launch Vehicle (GSLV). PSLV has had 55 launches with 52 successful ones.
  - NewSpace India Limited (NSIL) was established as the commercial arm of ISRO, to move the commercial side of space sector away from ISRO by creating demand from private players through Technology Transfer and aggregator economy models
  - India has launched 381 foreign satellites for 34 countries on a commercial basis between 1999-2022, with 36 OneWeb Gen 1 communication satellites launched in one go on 23rd October 2022.

- **Satellite Applications:** i.e. remote sensing, space-based navigation, earth observation, disaster management, testing, data analysis and others. Outside of ISRO, private space companies are also keen to harness the power of space data. India's space structure is moving from building India's capabilities under ISRO to further capitalisation of space-based technology for commercial applications as well as industry involvement in the sector. As the world is moving faster towards exploring space with fascinating new arenas in areas like space tourism and asteroid mining, India believes that privatisation will be the key to boost India's presence and capabilities in space.

ISRO is the 6th largest space agency in the world and holds an exceptional success rate. Moreover, ISO has also signed six agreements with four countries for launching foreign satellites between 2021-2023. From a commercial standpoint, these launches hold a potential of US$141 Million to be earned in revenues.

Snapshot of launch missions by ISRO in the past three years (ISRO annual report 2022-2023):

Mission	2021-22	2022-23	2023-24
Earth Observation Satellites	2	3*	2
Communication Satellites	0	0	1
Navigation Satellites	0	0	1
Space Science Satellites	0	0	3
Technology Demonstrator	0	0	0
PSLV	1	2	4
GSLV	1	0	2
LVM3	0	2*	1
Small Satellite Launch Vehicle	0	2*	1
Gaganyaan	0	0	0
TOTAL	4	9	15

LEGAL UPDATES

1. CABINET APPROVES AMENDMENT IN THE FOREIGN DIRECT INVESTMENT POLICY ON SPACE SECTOR

On 21 February 2024, The Union Cabinet chaired by Prime Minister Shri Narendra Modi approved the amendment in the foreign direct investment policy ("**FDI**") on space sector. Currently, the satellites sub-sector has been divided into three different activities with defined limits for foreign investment in each such sector.

The Indian Space Policy 2023 was notified as an overarching, composite and dynamic framework to implement the vision for unlocking India's potential in Space sector through enhanced private participation. The said policy aims to augment space capabilities; develop a flourishing commercial presence in space; use space as a driver of technology development and derived benefits in allied areas; pursue international relations and create an ecosystem for effective implementation of space applications among all stakeholders.

As per the existing FDI policy, FDI is permitted in establishment and operation of Satellites through the Government approval route only. In line with the vision and strategy under the Indian Space Policy 2023, the Union Cabinet has eased the FDI policy on Space sector by prescribing liberalized FDI thresholds for various sub-sectors/activities.

The proposed reforms seek to liberalize the FDI Policy provisions in space sector by prescribing liberalized entry route and providing clarity for FDI in Satellites, Launch Vehicles and associated systems or subsystems, Creation of Spaceports for launching and receiving Spacecraft and manufacturing of space related components and systems.

The entry route for the various activities under the amended policy are as follows:

a. **Upto 74% under Automatic route**: Satellites-Manufacturing & Operation, Satellite Data Products and Ground Segment & User Segment. Beyond 74% these activities are under government route.

b. **Upto 49% under Automatic route**: Launch Vehicles and associated systems or subsystems, Creation of Spaceports for launching and receiving Spacecraft. Beyond 49% these activities are under government route.

c. **Upto 100% under Automatic route:** Manufacturing of components and systems/ sub-systems for satellites, ground segment and user segment.

This increased private sector participation would help to generate employment, enable modern technology absorption and make the sector self-reliant. It is expected to integrate Indian companies into global value chains. With this, companies will be able to set up their manufacturing facilities within the country duly encouraging 'Make In India (MII)' and 'Atmanirbhar Bharat' initiatives of the Government.

2. PRITHvi Vigyan (PRITHVI) Scheme

On 05 January 2024, the Union Cabinet approved the overarching scheme called "PRITHvi viGYAN (PRITHVI)" of Ministry of Earth Sciences for implementation during the period of 2021 – 2026 at overall cost of ₹4797 Crores.

The PRITHVI scheme encompasses five on-going sub-schemes namely:-

i. Atmosphere & Climate Research-Modelling Observing Systems & Services (ACROSS).
ii. Ocean Services, Modelling Application, Resources and Technology (O-SMART).
iii. Polar Science and Cryosphere Research (PACER).
iv. Seismology and Geosciences (SAGE).
v. Research, Education, Training and Outreach (REACHOUT).

The overarching scheme of PRITHVI holistically addresses all the five components of earth system namely atmosphere, hydrosphere, geosphere, cryosphere and biosphere to improve the understating of the Earth System Sciences and to provide reliable services for the country. Various research & development and operational (services) activities under PRITHVI scheme are carried out in an integrated manner through combined efforts of the concerned Institutes under MoES.

3. TELECOMMUNICATION ACT, 2023

The Telecommunications Act was published on December 24, 2023, with the actual date for enforcement of the different provisions of the Telecommunication Act yet to be notified.

Licensing regime: Under the Telecommunications Act, satellite network has been included in the definition of "telecommunication network". Any person intending to establish, operate, maintain or expand the telecommunication network is required to obtain an authorization from the Central Government.

Satellite-based communication services can be provided within the scope of existing licenses/authorizations under the Indian Telegraph Act, 1885, which includes global mobile personal communication by satellites ("**GMPCS**") license, commercial very small aperture terminal ("**VSAT**") CUG service license, in-flight and maritime connectivity ("**IFMC**") service authorization, captive VSAT CUG license, national long distance ("**NLD**") and other authorization under the unified license.
Certain entities, such as Eutelsat OneWeb India, Jio Satellite Communications and Starlink have already obtained the GMPCS license to provide satellite communication services in licensed service areas.

Spectrum allocation: With respect to satellite spectrum allocation, the Telecommunications Act provides that spectrum for certain satellite-based services will be allocated by administrative process, i.e., without holding an auction for spectrum assignment.

Satellite-based services for which spectrum would be administratively allocated include GMPCS, NLD, international long distance ("**ILD**"), mobile satellite service in L and S bands teleports, television channels, direct-to-home ("**DTH**"), headend-in-the-sky ("**HITS**"), digital satellite news gathering ("**DSNG**") and VSAT.

4. New regulatory body facilitating private sector engagement: IN-SPACe

IN-SPACe or Indian National Space Promotion and Authorization Centre is the single-window, autonomous, nodal agency under the Department of Space. Launched in 2020, it has been established as an independent regulatory body.

Acting as a vital bridge between ISRO and the commercial sector, IN-SPACe takes on the role of overseeing and approving space operations and can be viewed as a part of the structural reform allowing private sector engagement. Its mandate is to encourage the construction of new space facilities and share space infrastructure as well as enabling, authorizing, and supervising a range of private sector space-based undertakings.

So far, IN-SPACe has signed 45 Memorandums of Understanding (*MOUs*) with non-governmental entities. The MoUs are anticipated to provide the required assistance for the implementation of the space systems and applications that these NGEs envision, which in turn will boost industry involvement in the production of launchers and satellites.

In October 2023, IN-SPACe, in partnership with ISRO and other stakeholders, unveiled a decadal vision and strategy for the Indian space economy, projecting the potential of the country's space economy to reach US$44 billion by 2033. Until the early 1990s, India's space economy and industry were shaped by ISRO, and the only way the private sector was involved was in building to ISRO specifications and plans.

5. INDIA AND BELGIAN ASTRONOMERS HIGHLIGHT SUCCESS OF COLLABORATION IN SPACE SCEINCE

Experts from India and Belgium and also from United States, Canada, Poland, SriLanka, South Africa, Ethopia, Kenya highlighted the advantages of scientific collaborations in stimulating activities in space sciences at the international workshop of the Belgo-Indian Network for Astronomy and astrophysics (BINA) organised by The Aryabhatta Research Institute of Observational Sciences (ARIES), an autonomous institute under the Department of Science & Technology (DST), Ministry of Science & Technology, Govt. of India.

"Belgian Science Policy Office (BELSPO) and Department of Science and Technology (DST) work together on exciting projects like cyber security, bioscience, marine science, black hole, climate change and many more and this workshop will emphasize the scientific potential of Indo-Belgian cooperations.

INDUSTRY SCENARIO AND GROWTH DRIVERS

Current Scenario:

Indian Space Sector was valued at $9.6 Bn in 2020, contributes 2%-3% of the global space economy. The size of the sector is expected to reach $13 Bn by 2025, and by 2030 India further aims to capture a larger share of close to 10% of the global economy.

Acknowledging the role of Private Sector, Prime Minister of India said "India needs to increase its share in the global space industry and the private sector will play a big role in that." Currently, the sector sees involvement from over 400 industrial firms including large Indian conglomerates as well as SMEs, working under the leadership of ISRO to develop subsystems for space launch and ground infrastructure.

India is the 27th country to sign the Artemis Accords, which establishes a practical set of principles to guide space exploration cooperation among nations participating in NASA's Artemis program. ISRO has signed six agreements with four countries for launching foreign satellites between 2021-2023. From a commercial standpoint, these launches hold a potential of $141 Mn to be earned in revenues.

NewSpace India Limited (NSIL) is now mandated to act as the exclusive public-sector aggregator for both demand and supply of space assets/services on a commercial basis, including offering satellite-based applications on a commercial basis, and the manufacture and launch of PSLV and other launch vehicles with involvement from private players.

NSIL has announced a total investment of $1.2 Bn in the next 5 years, to increase industry involvement and commercial activities in the sector. Indian start-ups are taking active interest in the space market, from just 1 start-up in space sector in 2012, industry has grown to 189 start-ups in 2023. The funding received by these start-ups reached a total of $124.7 Mn in 2023 from $67.2 Mn in 2021. Currently, space cooperative documents have been signed with 61 countries and five multilateral bodies.

Favourable policy changes in the space ecosystem in India are earmarking the country's leadership role globally. The Space Policy 2023 is a forward-looking document reflecting good intentions and a vision for the Indian space ecosystem. It suggests that the private sector is a critical stakeholder in the entire value chain of the space economy. Space Activities Bill and 10 draft policies are in the pipeline, which will provide the necessary regulatory framework and procedural guidelines for private space activities, as well as open new channels for investments and technological support for the sector.

Growth Drivers:

- Increasing demand for satellite services

  With new innovations in areas of satellite communication and other areas of application including geospatial data-based services, there is an increased demand for space-based services and

thereby the need for more players to venture into upstream and downstream sectors in space to provide commercial offerings.

- Encouraging Private Players

  The Private players can participate in setting up of ground stations for space crafts which constitutes 48% of the space sector budget. They can also venture in applications of space technology which contributes 45% of the space economy. Also, small satellite segment and component manufacturing are predicted to be emerging sectors for private participation.

- Emerging areas in the global sector

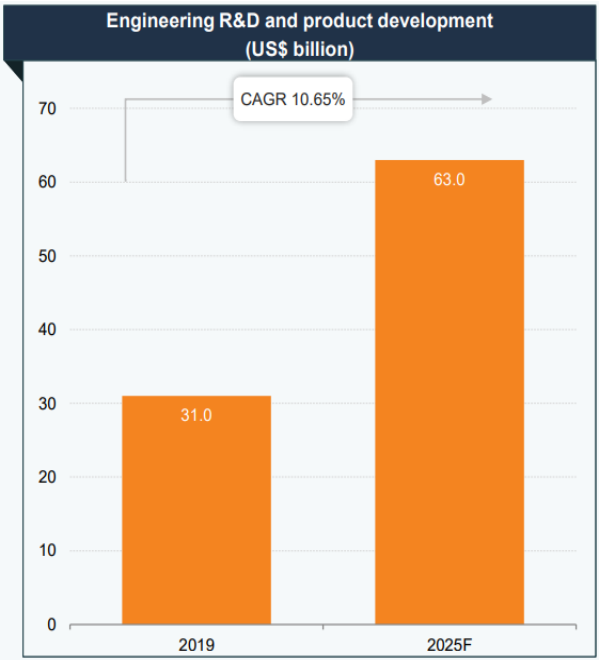
  Future opportunities in fascinating areas like space tourism and commercial recovery of space resources are coming up, promising enormous scope of growth in the sector.

- Complementary Aviation and Defence sector

  Bengaluru is ranked among top 3 in global aerospace and defence cities in attracting foreign investment and India is one of the top countries in the world in terms of defence procurement and allied production.

- Strong Adjacent industrial Support

  India is a leading innovator in machine tools, capital goods with robust IT and software sector.



The engineering R&D and product development market in India is forecast to post a CAGR of ~12% to reach US$ 63 billion by 2025 from US$ 31 billion in 2019. Newer capabilities such as supply chain, regulatory compliances and manufacturing engineering are being developed by engineering R&D service providers. Service providers in Europe are scaling up and setting offshore operations in India to access a cost effective and large talent pool. When it comes to outsourced innovation services, India is a global leader. According to NASSCOM's and Deloitte's study, 85% of the companies surveyed use a Global Capability Centres for engineering R&D, while nearly half make use of an Engineering Service Providers. India is alongside China among the top destinations for outsourcing.