

Part A: Policy direction and sectoral analysis

A1. Context

Recent pronouncements by the government and by the [Chairman](#) of IN-SPACe, the agency set up to oversee and promote commercialisation of the space sector, have added to the fears of scientists, engineers and concerned organisations about the direction in which ISRO is being steered.

Of particular concern is the growing role envisaged for the private sector in space-related activities in India and what appears to be shrinking responsibilities for ISRO, which is now mandated to transfer all technologies related to rocket launchers and satellites to private and other non-government entities (NGEs). Such apprehensions have also recently been expressed by serving ISRO personnel in a [letter](#) to the Chairman of ISRO, while nine employee associations have separately written to the Secretary of the Department of Space, seeking clarifications on statements made on behalf of IN-SPACe vis-à-vis the future role of ISRO.

These are not knee-jerk reactions against privatisation or the involvement of private players in space or other strategic sectors. Rather, these concerns relate to India's place in the global space ecosystem and to the self-reliant advancement of India's interests within it in an increasingly knowledge- or tech-based future. They also do not arise from misconstrued "narratives", as the IN-SPACe Chairman [believes](#), but from the very framework of the Indian Space [Policy](#) of 2023 and its roll-out as per official [sources](#).

A2. Technology transfer: public-sector and private routes

Transfer of rocket manufacturing technologies from ISRO has already begun with the Small Satellite Launch Vehicle (SSLV), in the first instance to the defence [PSU](#) Hindustan Aeronautics Limited (HAL). Under AIPSN's core position, such transfer to a public-sector entity under public control is distinct from private takeover of launch infrastructure.

Transfer of mature technologies for the larger PSLV, ISRO's workhorse, or for the even larger GSLV or LVM-3 to any private entity would entail a long learning curve and higher risks, except possibly for a few companies. PSUs like Bharat Dynamics, which already produces the Agni missile, may be a safer bet. AIPSN does not oppose the transfer of mature space technology under licence and on agreed terms to a PSU or highly capable and established ISRO private sector partner, with the technology remaining under ISRO ownership and with ISRO technical oversight and national-security safeguards. However, AIPSN opposes handover of launch infrastructure or outright transfer of technology and manufacturing rights to private monopolies at undervalued prices.

The growing demand for launch vehicles, which ISRO cannot meet with its current facilities, makes the idea of shifting the manufacture of rocket boosters with proven

repeatability out of ISRO for commercial purposes understandable—particularly if the logic is to free up ISRO for more challenging and strategic core tasks such as expeditions to the Moon or Mars, setting up and operating an Indian space station, crewed missions, scientific collaborations with other countries, and development of related technologies. To scale up launch-vehicle production, ISRO had mooted a consortium route, and in 2022 NewSpace India Limited (NSIL) awarded a contract (initially reported around Rs 824–860 crore) to a consortium led by Hindustan Aeronautics Limited (HAL) and Larsen & Toubro (L&T) to manufacture five PSLV-XL vehicles end-to-end, with the consortium expected to deliver most of the vehicle systems while ISRO retained some strategic elements (separation systems, certain avionics, mission design, launch operations, etc.). However, senior ISRO officials and employees have said these crucial functions must remain with ISRO, and any such transfer is acceptable only with retention by ISRO of rights over technology and future upgradations, along with appropriate terms and conditions, oversight and pre-flight approval, transparent valuation, and national-security safeguards—not as a route to private monopoly and surrender of technology rights by ISRO. It's unclear why this realistic, reliable model for scaling up launch-vehicle production is being brushed aside.

ISRO was never intended or structured to be a factory and has never been one. Even presently, over 80% of rocket booster components are made outside ISRO by PSU and private sector industry partners. PSUs and the private sector, where appropriate and under public safeguards, would probably play important roles in all the above core tasks too. Hopefully, technology transfer by ISRO would follow usual commercial practice, including fees for tech transfer, training, hand-holding and back-up, while ISRO retains rights for technology upgradation and improved versions.

A few private-sector entities with several decades of experience and capacity-building have indeed established themselves in advanced manufacturing and engineering and could well assist in broadening the base of the space industry. ISRO has historically worked with many such entities and SMEs. Some space-sector start-ups may also independently develop innovative and viable technologies and manufacturing capabilities. But all that is a far cry from the current haste to shift manufacturing and some launch functions and related infrastructure to the private sector.

However, the argument that ISRO must focus on expeditions to the Moon or Mars, setting up and operating an Indian space station, crewed missions, scientific collaborations with other countries, and development of related technologies and that commercial entities will meet the launch vehicles and satellites is not realistic nor desirable. It is not realistic because, out of the 130-odd launch manifests, nearly half are strategic, much of the remainder is civil, and only 15+ are commercial. Thus, most of the expenditure will come from public funds, and mobilising private capital is not feasible. But, it is feasible with a PSU or other public entity under public control, with transparent valuation, national-security safeguards, and ISRO retaining upgrade rights—not as a route to private monopoly. Thus, if the alleged bottleneck is the current cadence limitation, then ISRO's idea of a consortium is the best bet.

The current rationale for promoting the private sector does not take a fresh look at relations between the public and private sector but seems based on the tired ideological belief that the private sector does everything better than the public sector—an idea disproved in numerous cases in strategic sectors, especially as regards technology development.

A3. Launch economics and the fixed-cost problem

Many issues need to be considered. ISRO launches an average of 5–7 missions per year. Current demand from the public, including security, is much higher, and the problem lies not with ISRO's capability but with chronic understaffing and limited government funding. The realistic manifest lists nearly 130 satellites to be launched by 2030 to meet the projected demand. This includes 10+ launches for the Gaganyaan mission, about 6 deep-space missions (including Chandrayaan missions), 32 Earth observation satellites, 64 strategic satellites, and nearly 6 commercial/private satellites.

Nevertheless, claims suggest India will need to build and launch 200-300 satellites over the next six to seven years and ramp up launch frequency to around 50 a year to meet growing demand. These claims lack justification and context. The claims never explain what these 200-300 satellites will do, where the demand is, or who will fund these launches. When OneWeb used Indian launch vehicles to launch its 72 satellites, it did not use 72 separate launch vehicles and 72 launches; it accomplished this with just two launches. The wide projected gap between ISRO's capacity and launch requirement appears magnified to create optics and a ruse for privatisation, rather than reflecting any insurmountable bottleneck.

The China Satellite Network Group Co., Ltd. (China SatNet), a state-owned enterprise established in 2021 under SASAC (State-owned Assets Supervision and Administration Commission), plans to launch 12,000–13,000 satellites for national broadband as dual-use connectivity. Hundreds of satellites are already in orbit. Shanghai SpaceSail proposes launching 15,000 satellites for commercial broadband and connectivity services. Naturally, China is augmenting its launch fleet to meet these burgeoning launch projections. China does not permit either Starlink or OneWeb.

A consortium called SpaceRISE (led by major European operators SES, Eutelsat, and Hispasat), supported by industrial partners including Airbus Defence and Space, Thales Alenia Space, OHB, and others, is leading the European Union's IRIS² (Infrastructure for Resilience, Interconnectivity and Security by Satellite) project for a constellation of nearly 350 satellites. The EU is building this infrastructure to avoid critical dependence on a US private company (Starlink) or even a partially European commercial network (OneWeb) during crises or geopolitical tensions. As the launch requirement is comparatively small, the EU is not developing additional launch capacity or commercial launch vehicles.

The Indian telecom industry has no such plans; instead, it is tying up with OneWeb or Starlink as local partners. Neither OneWeb nor Starlink, which are expected to commence operations in India, will depend on Indian launch vehicles. Thus, there is no demonstrated commercial demand established for a large-scale launch requirement. Even assuming the rather ambitious 50 launches a year by 2030, that does not make for a booming commercial business for private rocket manufacturers spread over several different booster types.

The same issue arises in respect of launches. A recently published international [study](#) has shown that launch costs in India are several times those of the US or other countries. Exact numbers may be debated, but the main factor correctly identified is that, while recurring operational costs for each launch may be low in India, as often cited, the low annual number of launches results in a high per-launch cost when infrastructure, manpower and

other fixed costs are taken into account. When the new SSLV spaceport in Kulasekarapattinam in Tamil Nadu is handed over to a private-sector player as decided, will the new player charge globally competitive rates for launches but still bear all fixed costs and run an overall loss? Or will ISRO continue to bear fixed costs while the private player skims the cream off the top of operational costs alone?

A4. The missing demand side

In the global space market today, [about](#) 78% of the value lies in commercial user services such as broadcast, telephony, internet data and so-called “reach applications” such as aggregators, delivery services, logistics, etc., while only a much smaller share is realised through infrastructure, launch and payload hardware. India’s Space Policy calls for shifting from supply to demand, but this is still missing.

Most of the vaunted start-ups are in supply-side innovations. So are the technology and infrastructure transfers from ISRO to the private sector. The big missing link in India is in market demand. Where are the commercial applications, the business ventures which will use all the space-based data? So far, ISRO has done yeoman service for the nation by generating data for resource exploration and mapping, weather (including cyclone observation and forecasting), and Intelligence, Surveillance, and Reconnaissance (ISR) services, broadcasting, and telephony. Except for the last-mentioned, the government has been the main user.

This is not to say there is no commercial space market in India. As of the beginning of 2026, India has 53 operational civilian satellites: 21 communication, 21 Earth observation, 8 navigation, and 3 science/experimental. Of the 21 communication satellites, NSIL has taken ownership of nearly 10 in-orbit GSAT/CMS communication satellites that were previously under government/ISRO control. It also commissions new “demand-driven” satellites (for example, GSAT-24) that NSIL fully funds and owns from the start. The remaining communication satellites are used for civil and ISR; so are the EOS (they are largely dual-use). Thus, they cannot be/should not be handed over to non-government entities.

Commercial operations are supposed to be the private sector’s domain, and this is the main role they should be playing in the space sector, which would drive up launch frequency and hence rocket as well as payload manufacture. Will the [forthcoming](#) Space Activities Bill address this problem, with adequate protection from intrusion of inimical foreign interests’ venture capital for start-ups and through FDI?

A5. ISRO’s core tasks and funding

ISRO has a lot on its plate which the nation badly needs for development: a new heavy rocket for crewed and interplanetary missions, reusable rocket boosters, defence satellites found badly wanting during recent conflicts, a full navigation system including India’s own GPS-equivalent, advanced technologies for the space station and crewed programmes, lunar exploration, and so on.

India’s space policies should strongly support these and provide adequate funding and support to ISRO, which has been seriously lacking over the years. Technology transfer for

manufacturing to PSUs or capable and trusted private-sector partners, with appropriate terms and conditions, will then make sense. Hopefully, the private sector generates the necessary commercial applications and businesses—their supposed core competences—without waiting for government funds for that too.

Part B: AIPSN stands in defence of ISRO

B1. Why ISRO must be defended

For several days, a flood of reports and interpretations about the Indian Space Research Organisation (ISRO)—one of the country's most strategically important central government institutions—has circulated in newspapers and other media. Not only the employees' associations but also former heads of ISRO have come out in the open to prevent further damage to ISRO. Especially in view of the statements emanating from IN-SPACe and its move to open up the rocket-launching segment to private-sector participation when the Space Policy has not been discussed in Parliament, nine employee associations of ISRO have addressed a letter to the Secretary, Department of Space, seeking clarifications on the statement made on behalf of IN-SPACe vis-à-vis the future role of ISRO.

AIPSN recognises that ISRO has changed everyday life. Today's ISRO was not built in a day. Activities that began in 1962 at Thumba, Thiruvananthapuram, under the Indian National Committee for Space Research (INCOSPAR), then under the Department of Atomic Energy, formed the foundation of India's space programme. Satellite technology has reached communications, television, telephony, the internet, weather observation, remote sensing, natural resource monitoring, disaster management, navigation, agriculture, fisheries, and the monitoring of railways and other transport systems—directly shaping the economy and people's lives.

Designing and building the launch vehicles that place satellites needed for national security and public service into their intended orbits, without complete dependence on foreign technology, is itself a major strategic achievement and proof of scientific self-reliance. ISRO cannot therefore be treated as just another government office. ISRO is one of the main pillars of the country's scientific capability, technological sovereignty, national security and public interest. Its capabilities were built in an era of limited facilities and resources. Indian scientists, engineers, technical staff and workers advanced the field of space technologies through extraordinary labour and dedication. This is not the achievement of any single scientist or political leader. ISRO is the collective labour of thousands across scientific, engineering, technical, worker and administrative cadres. Generations who worked as one for mission success, without measuring their contribution by pay scale or rank, are ISRO's real capital.

B2. Importance of who decides

IN-SPACe was set up to promote the private sector in the space economy and, among others, to act as an interface between ISRO and emerging startups for sharing of space infrastructure and premises under the control of ISRO, with due consideration to ongoing activities, establishment of temporary facilities within premises under ISRO control based on

safety norms and feasibility assessment and usage of spacecraft data and rolling out of space-based services and all the associated infrastructure for the same. However, surprisingly, IN-SPACe has invited expressions of interest (EOI) from private industries or consortia to handle end-to-end realisation, manufacturing, operation, and commercialisation of India's heaviest rocket, the Launch Vehicle Mark-III (LVM3), as well as Operations and Management of SLC at Kulasekarapattinam. Curiously, the EOI bars PSU and state enterprises from participation. Why so is inexplicable. IN-SPACe is not envisaged to call for an EOI; it must have been either ISRO or NSIL. Why these organisations were sidelined is also not clear.

ISRO has always engaged the private sector in the manufacturing of launch vehicles. However, IN-SPACe routes to privatisation appear to involve (1) selling cheap knowledge and technology developed and (2) hollowing out manufacturing, which means a lack of quality discipline and weakening of the knowledge required for the development of critical technologies.

This criticism is aimed at ensuring technology transfer and ensuring retention of technology and IP with ISRO. Moreover, ISRO's traditional contracting with PSUs continues to provide public ownership and control. While the contribution of the private sector to ISRO's requirements has not been opposed in principle by either the former heads or by the associations of employees, the demand is for a wider discussion of the Space Policy, which assigned roles to Inland IN-SPACe. The Space Policy must ensure that what shall be manufactured in-house is done after sufficient discussion internally.

B3. Stagnation in ISRO funding: NavIC and spectrum

The government is starving ISRO of funds and support. Budget allocations have consistently been less than what ISRO sought, and actuals have been less than the budget announcements. It is not unreasonable to suggest that ISRO is being deliberately starved of resources so that its functions can be transferred to private players under the guise of 'efficiency' and/or 'non-performance'.

The case of NavIC (Navigation with Indian Constellation) illustrates this neglect very well. NavIC has considerable strategic importance. NavIC is meant to replace the US-based GPS, whose services the country cannot take for granted, as the Kargil crisis amply evidenced. The NavIC system's efficacy is critically dependent on the functioning of the atomic clocks that the NavIC satellites carry. Over the last 13 years, almost all NavIC satellites have progressively become dysfunctional, largely because of faulty atomic clocks supplied by an international vendor. ISRO is now developing an indigenous clock, which has been flown on the last few NavIC satellites. The government made no effort to help ISRO replace the non-operational NavIC satellites. Investments in NavIC would have enabled ISRO to strengthen national security.

B4. IN-SPACe misjudging ISRO and the launch-infrastructure question

After IN-SPACe was formed, steps to open ISRO infrastructure to private use have come to be intensified: facilities offered at low cost, use of launch systems, and private access

to new launch sites. The subsequent opening of SSLV manufacture and launch facilities to private firms—beyond the earlier transfer to HAL as a PSU—and related measures around launch infrastructure in the Thoothukudi region of Tamil Nadu illustrate the scale of the shift.

In this context, the growth of the private space start-up Skyroot is notable. It was founded in Hyderabad by Pawan Kumar Chandana and Naga Bharath Daka, both former ISRO engineers. The publicity around the successful Vikram-1 launch signalled the new importance given to the private space sector. The launch used ISRO facilities at Sriharikota. Senior ISRO officials and former chairmen attended; the Prime Minister congratulated the venture.

AIPSN is opposed to technologies, human resources and infrastructure developed over decades with public money being used cheaply to grow private companies. This opposition does not extend to transfer to public-sector entities under public ownership and ISRO oversight; such transfer may be acceptable if properly valued, audited and kept under public control. We are concerned about who in the private sector is being allowed to capture the economic benefit of knowledge created in the public sector. Foreign venture capital is driving IN-SPACe's new routes to privatisation. We wish to ensure that public interest and national security are protected when facilities are given to private firms.

B5. Contract staff or full-time researchers

A major issue in the debate on ISRO's future is the condition of its workforce. It is often argued that talented scientists leave ISRO for better-paid private jobs because pay and benefits are inadequate. Few attribute this attrition to better pay in the private sector. In fact, when compared with many other central government organisations, regular appointments in ISRO demand high educational qualifications and merit. Even some clerical posts require a first-class degree. Thus, the criticism that pay and promotion opportunities are not commensurate with qualifications and work across all cadres cannot be ignored. Nevertheless, the exodus of expertise appears to be driven by uncertainty about ISRO's future direction, underfunding, and bodyshopping by the private space industry.

The resignations leave ISRO in a tight spot; meanwhile, fresh recruitment has been minimal. Together, these have created an unprecedented gap between sanctioned strength and employees on the rolls. The number of sanctioned posts across the Department of Space has stayed around 20,000 since 2019-20. Employees, however, have fallen from 17,222 in 2019-20 to 14,637 in 2025-26. Consequently, staffing has dropped from 85.9% to 72.2%, while vacancies have more than doubled from 2,817 to 5,632.

For several years, regular recruitment to many posts, including technicians, has been restricted, and contract and subcontract arrangements have been relied upon more heavily. The labour of tens of thousands of contract workers at ISRO centres has been critical to meeting rising launch demand. Many do not receive the service benefits or job security of regular employees. Many work on fixed daily wages with little social security. This human-resource problem affects the quality and continuity of the country's space missions. When more than 10,000 technical workers on contract across centres are also counted, the scale of the invisible labour behind ISRO's successes becomes clear. This is not only a labour issue.

B6. ISRO's public wealth is not for sale.

When rocket technology, launch systems, research facilities and human capability developed for more than sixty years with public wealth are then opened for private profit, questions of ownership and benefit become unavoidable. Private firms may use ISRO infrastructure. But the return on public money spent to build that infrastructure is not an irrelevant question. To present privatisation as mere “development” without clear answers to these questions is dangerous.

Space technology is unlike ordinary industry. Satellites, launch vehicles, communications, navigation and disaster-management systems are directly linked to defence and security. Transfer of advanced knowledge, including rocket technology, must therefore be handled with the highest caution from a national-security standpoint. A model in which public-sector technology moves to private monopolies and infrastructure created with public money is made available to private companies at low cost must be examined for what it will give the country in the long run and how it will ensure public interest and social control.

B7. Protecting ISRO is protecting science.

When ISRO's problems are discussed, one fact must not be forgotten: ISRO's strength does not lie only in its buildings, rockets or machines. It lies in the people who create and operate them. To strengthen ISRO, scientists, engineers, technical staff and workers must have decent working conditions, reasonable pay, and job security and promotion prospects. The practice of using contract workers for years as substitutes for regular employment must end, and regular recruitment to required posts must take place. A work environment must be created in which a new generation of scientific talent wants to stay in ISRO. What is not needed is a policy that weakens public-sector scientific capability and channels human resources and technology into the private sector. AIPSN asks the current management not to target the voices of opposition.

Concerns about the transfer of space technology to the private sector can no longer be dismissed as merely the political argument of critics. The 410th Report of the Department-related Parliamentary Standing Committee on Science and Technology, Environment, Forests and Climate Change, presented in Parliament on 25 March 2026, itself recorded a serious concern on this subject. The Committee expressed concern that space technologies are being transferred to private entities at prices disproportionately low relative to their commercial potential. The Committee recommended that licensing fees for technology transfer should reflect real commercial value, distinctiveness and social importance. It also said clear valuation norms are needed and that all technology-transfer agreements should be subjected to periodic third-party audit.

Cooperation with the private sector is possible. New enterprises can be encouraged for technological progress. Organisations and employees in the field do not oppose this. From the beginning, ISRO has worked with both the public and private sectors. But that must not mean loss of public ownership of wealth, national scientific capability, or public control over strategically important technologies. The issue is therefore not the simple question “private sector—yes or no?”

B8. AIPSN demands

The main questions that need to be answered are:

1. Who protects the real value of technology developed with the people's tax money?
2. How much of the economic gain from knowledge created with public wealth will return to the public?
3. Who sets the price of technology transferred to private firms, and by what criteria?

The Department of Space should be transparent and publish the results of the investigation into the failure of two successive PSLV missions and take corrective measures. Privatisation of manufacturing will only add to the challenge of tackling such failures in the future. Failures occur in science; the nature of science is to learn from them and return stronger.

AIPSN is opposed to:

- transferring public wealth to private monopolies;
- shrinking regular employment while expanding contract labour;
- Moving towards a form of privatisation that gradually renders ISRO, built with the tax money of crores of people, the hard labour of generations and the life-dedication of scientists, less relevant is unacceptable because, in the long run, it will be a serious loss to the country's scientific capability and public interest.

ISRO's failures must be corrected scientifically; its successes must not be privatised. ISRO's technology is the wealth of the nation. Its infrastructure is the creation of the people's tax money. Its real strength is the collective labour of scientists, employees and workers.