INDIA'S SPACETECH REVOLUTION: FORGING PRODUCT LEADERSHIP FROM SERVICES

October 2025

EVOLVING ECOSYSTEM

Transitioning from a foundational state-led program to a dynamic private space sector.

NATIONAL SECURITY FOCUS

Aggressively advancing defense capabilities through strategic space initiatives.

MANUFACTURING REVOLUTION

Revolutionizing space manufacturing and industrial capacity.

INNOVATION UNLEASHED

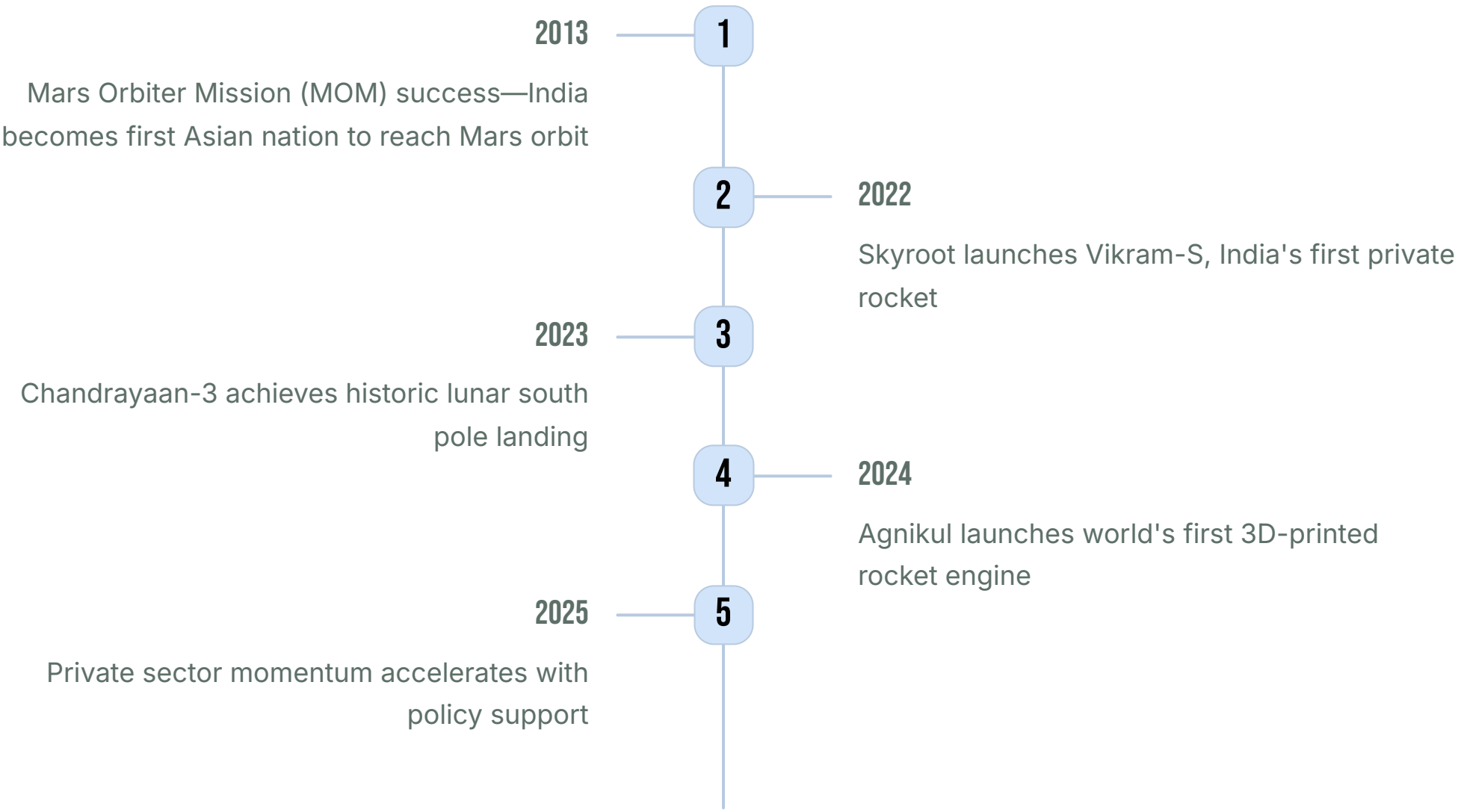
Unleashing a wave of groundbreaking innovation across the sector.

INDIA'S SPACE MOMENT

A DECADE OF TRANSFORMATION

India has emerged as one of the top six global space ecosystems, now housing 3.6% of all SpaceTech companies worldwide. This remarkable achievement stems from a powerful combination of ISRO's decades-long legacy, progressive policy reforms, and an unprecedented entrepreneurial surge that has captured global attention.

The nation's space ambitions are backed by concrete targets and achievements. India aims to build a $40 billion space economy by 2040, up from approximately $8 billion in 2023. This ambitious goal is supported by global validation through landmark missions including the Mars Orbiter Mission in 2013, the successful Chandrayaan-3 lunar landing in 2023, and India's first private rocket launch in 2022—milestones that have firmly established India's credentials on the world stage.



POLICY UNLOCKS: ACCESS FOR PRIVATE INNOVATORS

THE REFORM FLYWHEEL

India's SpaceTech transformation has been catalysed by a series of strategic policy reforms that have systematically opened doors for private innovation. NewSpace India Limited (NSIL), established in 2019 as ISRO's commercial arm, began the process of technology transfer to private entities. This was followed by the creation of IN-SPACe in 2021, which serves as a one-window authorisation body for startups, dramatically simplifying regulatory processes.

The Indian Space Policy 2023 brought much-needed clarity by defining distinct roles: ISRO focuses on research and development, NSIL handles commercialisation, and IN-SPACe manages regulation. Most recently, the ₹1,000 crore Space VC Fund launched in 2024 represents India's first dedicated SpaceTech investment programme, providing crucial capital support to emerging ventures. Together, these reforms have created an enabling environment where private innovation can flourish alongside the established capabilities of ISRO.

01

NEWSPACE INDIA LTD (2019)

Commercial arm for ISRO technology transfer to private sector

02

IN-SPACE (2021)

One-window authorisation for startups and regulatory simplification

03

INDIAN SPACE POLICY (2023)

Clear roles defined—ISRO (R&D), NSIL (commercialisation), IN-SPACe (regulation)

04

SPACE VC FUND (2024)

₹1,000 crore dedicated investment programme for SpaceTech ventures

PRIVATE MOMENTUM: PROOF OF CAPABILITY

INDIA'S "NEWSPACE" ACHIEVEMENTS

India's private space sector has moved rapidly from aspiration to achievement, demonstrating world-class capabilities that rival established space nations. Skyroot Aerospace's Vikram-S launch in 2022 marked a historic milestone as India's first private rocket launch, proving that indigenous private companies could master complex launch technologies. Building on this momentum, Agnikul Cosmos achieved another world first in 2024 with the Agnibaan SOrTeD launch, which utilised the world's first single-piece 3D-printed rocket engine—a breakthrough in manufacturing technology.

The financial backing for this revolution has been substantial, with Indian space startups raising over $350 million between 2020 and 2024 across more than 70 funding rounds. This capital has fuelled the rapid development of indigenous hardware across the entire value chain, from propulsion systems and sensors to complete satellites, advanced materials, and sophisticated analytics platforms. The ecosystem is no longer dependent on imported technology; instead, it's building cutting-edge solutions that are competitive on the global stage.

SKYROOT VIKRAM-S

India's first private rocket launch in 2022

AGNIKUL AGNIBAAN

World's first 3D-printed single-piece engine launch in 2024

$350M+ RAISED

Across 70+ funding rounds from 2020-2024

INDIGENOUS HARDWARE

Propulsion, sensors, satellites, materials, analytics

MARKET MAP: THE FULL STACK

INDIA'S EXPANDING SPACE VALUE CHAIN

India's SpaceTech ecosystem now spans the entire value chain, from upstream launch capabilities to downstream applications. The upstream segment includes launch vehicles, propulsion systems, and satellite manufacturing. The midstream layer encompasses critical subsystems such as communications infrastructure, sensors, Free-Space Optical Communication (FSOC), and advanced materials. The downstream segment focuses on Earth Observation (EO), data analytics, mobility solutions, and climate monitoring applications.

Key players are emerging across all segments, with companies like Skyroot and Agnikul leading in launch, Pixxel and Bellatrix advancing satellite and propulsion technologies, and Dhruva Space building ground infrastructure. Rockstud Capital's portfolio companies SpaceFields and Olee.Space are pioneering innovations in propulsion and optical communications respectively, positioning themselves at the cutting edge of India's SpaceTech revolution.

DOWNSTREAM

Earth Observation, analytics, mobility, climate monitoring applications

MIDSTREAM

Subsystems, communications, sensors, FSOC, advanced materials

UPSTREAM

Launch vehicles, propulsion systems, satellite manufacturing

Key Players: Skyroot | Agnikul | Pixxel | Bellatrix | Dhruva Space | SpaceFields (RCIF) | Olee.Space (RCIF)

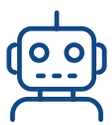
EMERGING FRONTIERS OF INNOVATION

India's SpaceTech sector is pushing boundaries across multiple technological frontiers. Green propellants represent a significant advancement, offering safer, more efficient alternatives to traditional rocket fuels whilst mitigating space debris concerns. In-space manufacturing is opening new possibilities through micro-gravity materials production and autonomous robotics that can operate in the harsh environment of space.

Earth Observation is entering a new era with hyperspectral imaging, Synthetic Aperture Radar (SAR), thermal sensing, and AI-powered analytics that can extract actionable insights from vast amounts of satellite data. Perhaps most transformative is the advancement in optical and quantum communications, where Free-Space Optical Communication (FSOC) combined with Quantum Key Distribution (QKD) promises to deliver secure, high-throughput data networks that will be essential for future space infrastructure and national security applications.

GREEN PROPELLANTS

Safer, more efficient rocket fuels that mitigate debris and environmental impact



IN-SPACE MANUFACTURING

Micro-gravity materials production and autonomous robotics for space operations

EARTH OBSERVATION 2.0

Hyperspectral, SAR, thermal imaging combined with AI analytics platforms

OPTICAL & QUANTUM COMMS

FSOC and QKD enabling secure high-throughput data networks

INFRASTRUCTURE & STATE ECOSYSTEMS

WHERE SPACE MANUFACTURING IS TAKING ROOT

India's SpaceTech ecosystem is flourishing across multiple state hubs, each developing specialised capabilities. Karnataka leads with over 200 space startups concentrated in Bengaluru, which has become India's undisputed SpaceTech capital. Tamil Nadu has launched an ambitious Space Industrial Policy 2025, targeting ₹10,000 crore in investment and the creation of 10,000 jobs, positioning itself as a major manufacturing hub.

Telangana has built a strong ecosystem around the Orbit incubator, T-Hub, and a growing geospatial analytics cluster that attracts both startups and established players. Supporting this state-level activity, national programmes like ISRO's Space Technology Incubation Centres (S-TICs), the Innovations for Defence Excellence (iDEX) initiative, and the Atal Innovation Mission are providing crucial lab access, mentorship, and funding that help startups bridge the gap from concept to commercial reality.

KARNATAKA

200+ space startups concentrated in Bengaluru, India's SpaceTech capital with mature ecosystem

TAMIL NADU

Space Industrial Policy 2025 targeting ₹10,000 crore investment and 10,000 jobs

TELANGANA

Orbit incubator, T-Hub and geospatial analytics cluster driving innovation

National support infrastructure includes **ISRO S-TICs** for technology incubation, **iDEX** for defence innovation, and **Atal Innovation Mission** for mentorship and lab access.

CASE STUDY 1: SPACEFIELDS

PROPELLING INDIA'S NEWSPACE AMBITION

SpaceFields represents the cutting edge of India's propulsion technology development, building next-generation solid rocket engines for both aerospace and defence applications. The company has achieved significant technical milestones, with three engines currently ready for testing at the Indian Institute of Science (IISc). Most notably, SpaceFields has developed India's first aerospike rocket engine, which has successfully completed cold-flow testing—a breakthrough that positions India amongst a select group of nations with this advanced technology.

Rockstud Capital's investment thesis for SpaceFields centres on several key factors: manufacturing-first intellectual property that provides defensible competitive advantages, scalability of production processes that can meet growing demand, and dual-use market potential serving both commercial aerospace and strategic defence sectors. The company exemplifies the type of deep-tech manufacturing capability that India needs to build to achieve self-reliance in critical space technologies whilst also creating export opportunities in global markets.

NEXT-GEN ENGINES

Solid rocket engines for aerospace & defence

TESTING MILESTONES

3 engines ready for IISc testing

AEROSPIKE BREAKTHROUGH

India's first aerospike engine cold-flow tested

Rockstud Investment Thesis: Manufacturing-first IP, production scalability, and dual-use markets (commercial + defence)

CASE STUDY 2: OLEE.SPACE

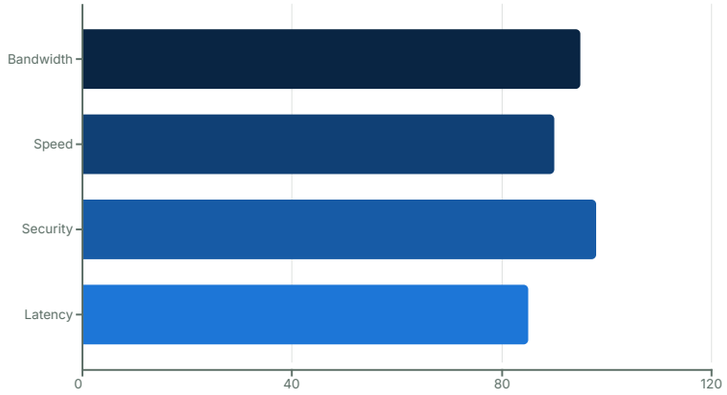
REDEFINING SATELLITE CONNECTIVITY

Olee.Space is pioneering Free-Space Optical Communication (FSOC) systems that promise to revolutionise satellite connectivity. Unlike traditional radio frequency (RF) communications, FSOC uses laser-based optical links to transmit data, offering dramatically higher bandwidth and lower latency. This technology directly addresses the growing problem of RF spectrum congestion whilst preparing the ground infrastructure for quantum communication capabilities through Quantum Key Distribution (QKD).

The company is developing an India-made photonics stack that has significant export potential in both defence and commercial satellite communications markets. As nations and companies race to build mega-constellations of satellites, the need for high-speed, secure communication links becomes critical. Olee.Space's technology positions India to be a key supplier of this essential infrastructure, supporting both national security requirements and commercial opportunities in the rapidly expanding global satellite communications market.

TECHNOLOGY ADVANTAGES

- Addresses RF spectrum congestion with optical links
- Dramatically reduced latency compared to traditional systems
- Quantum communication ready (QKD capability)
- India-made photonics stack for strategic independence
- Export potential in defence & commercial satcom



ROCKSTUD × IDEX PARTNERSHIP

CATALYSING INDIA'S DEFENCE & SPACETECH INNOVATION

Rockstud Capital has signed a landmark Memorandum of Understanding (MoU) with Innovations for **Defence Excellence (iDEX)** to co-develop India's DefenceTech and SpaceTech ecosystem. This strategic partnership represents a powerful alignment between venture capital expertise and government innovation programmes, creating a unique platform to accelerate the development of mission-critical technologies for national security.

Together, Rockstud and iDEX aim to back founders building solutions that strengthen India's strategic capabilities, enhance domestic manufacturing, and support the development of an independent supply chain for critical systems. The partnership goes beyond capital deployment—Rockstud offers portfolio companies strategic guidance, extensive network access, and operational resources that help deep-tech ventures scale effectively. This collaboration embodies the vision of an AtmaNirbhar (self-reliant), innovation-driven India where private capital and government support work in concert to build world-class capabilities in strategic sectors.

MISSION-CRITICAL SOLUTIONS

Backing founders building technologies for national security and strategic independence

DOMESTIC MANUFACTURING

Strengthening India's manufacturing capabilities and self-reliance in critical systems

INDEPENDENT SUPPLY CHAIN

Supporting development of indigenous supply chains for strategic technologies

Beyond capital, Rockstud offers **strategic guidance**, **network access**, and **operational resources** that help scale deep-tech companies from concept to market leadership.

OUR INVESTMENT LENS

HOW WE IDENTIFY WINNERS IN SPACETECH

Rockstud Capital applies a rigorous, multi-dimensional framework to identify SpaceTech ventures with the potential to become category leaders. Our investment lens focuses on five critical factors that we believe separate winners from the rest of the field.

First, we look for exceptional founder-market fit, where founding teams possess deep domain expertise combined with proven execution ability. Second, we prioritise manufacturing-first intellectual property in areas like propulsion, communications, and subsystems—technologies that create defensible competitive moats. Third, we seek companies integrating artificial intelligence across design, testing, and autonomous operations to achieve superior performance and efficiency.

Fourth, we favour ventures with dual market use, serving both defence and commercial customers to diversify revenue streams and accelerate growth. Finally, we assess global competitiveness, looking for companies that can compete internationally on both cost and performance metrics. SpaceFields and Olee.Space exemplify this investment thesis, combining technical excellence with strategic market positioning.

FOUNDER-MARKET FIT

Domain expertise combined with execution ability

GLOBAL COMPETITIVENESS

Cost and performance edge in international markets

MANUFACTURING-FIRST IP

Propulsion, comms, subsystems with defensible advantages

AI INTEGRATION

Design, testing, autonomous operations enhancement

DUAL MARKET USE

Defence and commercial demand diversification

RISK & RESILIENCE

CHALLENGES & MITIGATION STRATEGIES

Investing in SpaceTech requires clear-eyed assessment of sector-specific risks and robust mitigation strategies. Capital intensity represents the most obvious challenge—space ventures require substantial funding to reach commercial viability. We address this through staged milestone-based funding combined with co-investment partnerships with iDEX and IN-SPACe, which provide both capital and validation.

Regulatory cadence can impact timelines, which we mitigate through active liaison with IN-SPACe and maintaining rigorous export compliance frameworks. Supply chain gaps in specialised components are addressed through vendor development programmes and strategic co-manufacturing partnerships. Finally, talent availability and test infrastructure constraints are managed through collaborations with ISRO's Space Technology Incubation Centres, Defence laboratories, and university research programmes that provide access to both skilled personnel and critical testing facilities.

1

CAPITAL INTENSITY

Mitigation: Staged milestones & co-funding with iDEX and IN-SPACe

2

REGULATORY CADENCE

Mitigation: IN-SPACe liaison & export compliance framework

3

SUPPLY CHAIN GAPS

Mitigation: Vendor development & co-manufacturing partnerships

4

TALENT & TEST INFRASTRUCTURE

Mitigation: ISRO S-TIC, Defence labs & university collaborations

WHAT WE'RE LOOKING FOR

FRONTIER BUILDERS WANTED

Rockstud Capital is actively seeking exceptional founders building India's next generation of SpaceTech capabilities. We are particularly interested in ventures across five key technology domains that represent the future of the sector.

In propulsion and green fuels, we seek innovations that improve efficiency, safety, and environmental impact. For quantum and optical communications, we're looking for teams developing FSOC and QKD technologies that will form the backbone of future secure networks. Small-satellite platforms and Attitude Determination and Control Systems (ADCS) represent critical infrastructure for the coming wave of satellite constellations.

Earth Observation and analytics AI platforms that can extract actionable intelligence from satellite data are of high interest, as are in-orbit servicing and de-orbit solutions that address the growing challenge of space sustainability. If you're building breakthrough technologies in these areas with a vision for India's next orbit of innovation, we want to hear from you.

PROPULSION & GREEN FUELS

Next-generation propulsion systems and environmentally sustainable rocket fuels

QUANTUM/OPTICAL COMMS

FSOC and QKD technologies for secure high-bandwidth communications

SMALL-SAT PLATFORMS & ADCS

Compact satellite platforms and precision attitude control systems

EO & ANALYTICS AI PLATFORMS

Earth observation combined with artificial intelligence for actionable insights

IN-ORBIT SERVICING & DE-ORBIT

Satellite servicing and sustainable space debris management solutions

Join us if you're building for India's next orbit of innovation.

THE PATH TO GLOBAL LEADERSHIP

INDIA'S STRATEGIC ADVANTAGES

India's trajectory towards SpaceTech leadership is underpinned by several unique strategic advantages that position the nation for outsized success. The combination of ISRO's proven technical capabilities, a large pool of engineering talent, competitive cost structures, and supportive government policies creates a powerful foundation for growth.

The domestic market itself represents a significant opportunity, with defence modernisation, infrastructure monitoring, agriculture, disaster management, and telecommunications all requiring advanced space-based solutions. India's frugal engineering approach—demonstrated repeatedly through missions like Mangalyaan and Chandrayaan—proves that world-class results can be achieved at a fraction of the cost incurred by Western space programmes.

As global supply chains diversify and nations seek alternatives to established space powers, India is well-positioned to become a preferred partner for satellite manufacturing, launch services, and space applications. The convergence of technical capability, cost competitiveness, and policy support creates a unique window of opportunity for Indian SpaceTech ventures to capture significant global market share whilst serving critical national priorities.

$40B

TARGET ECONOMY

India's space economy goal by 2040

3.6%

GLOBAL SHARE

Of worldwide SpaceTech companies

200+

STARTUP HUB

Space companies in Karnataka alone

$350M+

CAPITAL RAISED

By Indian space startups 2020-2024

INDIA'S SPACETECH IS READY FOR LIFT-OFF

OUTLOOK & CALL TO ACTION

Policy is aligned, capital is forming, and founders are proving flight-heritage. The coming decade will witness India's transformation from a component supplier to a global SpaceTech leader, with indigenous capabilities spanning the entire value chain from launch vehicles to advanced applications. The ecosystem has reached an inflection point where technical capability, policy support, and market demand are converging to create unprecedented opportunities.

Rockstud Capital, in partnership with iDEX, is committed to backing the deep-tech founders who are shaping India's strategic and industrial future. We bring more than capital to the table—our portfolio companies benefit from strategic guidance, extensive networks across government and industry, and operational support that accelerates their path to market leadership. We understand the unique challenges of building hardware-intensive, long-gestation ventures in strategic sectors, and we're structured to support founders through the entire journey.

For founders building breakthrough SpaceTech solutions, for corporates seeking to participate in India's space revolution, and for fellow investors who share our vision of an innovation-driven, self-reliant India—the time to act is now. India's SpaceTech sector is ready for lift-off, and we invite you to join us in this extraordinary journey towards global leadership by 2035.

POLICY ALIGNED

Clear regulatory framework enabling private innovation

CAPITAL FORMING

Dedicated funds and investor interest accelerating

FLIGHT-HERITAGE PROVEN

Founders demonstrating world-class technical capabilities

Join us in building India's SpaceTech future.

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