

**SIA-India Inputs on
Draft National Deep Tech Startup Policy (NDTSP 2023)**

22 September 2023

Introduction:

SIA-India commends the Office of PSA to GOI for its initiative in crafting the National Deep Tech Startup Policy, a comprehensive framework aimed at addressing the challenges faced by deep tech startups. Having an exclusive policy dedicated to deep tech startups, such as those working in the space sector, is of paramount importance due to the unique nature of this sector and its potential to drive innovation, economic growth, and technological advancements. Deep tech startups operate in cutting-edge fields such as space technology, artificial intelligence, biotechnology, quantum computing, etc. where the challenges and opportunities are distinct from those in traditional startup domains. SIA-India has consistently advocated for such a specialized policy in various submissions and presentations, recognizing its significance in fostering a conducive environment for space sector innovation.

The policy centres around four foundational pillars: securing India's economic future, advancing toward a knowledge-driven economy, fortifying national capability, and promoting ethical innovation. Recognizing the dynamic nature of deep tech startups, the policy delineates key attributes to guide targeted policy interventions while identifying nine thematic priority areas for ecosystem development. The policy measures aim to boost innovation, strengthen IP rights, secure long-term funding, facilitate shared infrastructure, and establish regulations and standards. The draft also prioritizes capacity building, diversity, and talent attraction and promotes procurement from deep tech startups.

The policy aims to make substantial contributions to India's GDP by boosting high-tech exports, enhancing economic competitiveness, and fostering self-reliance.

The following SIA-India inputs to the Draft Policy provide recommendations and suggestions while highlighting areas needing clarification or further development.

Section 2: The Definition and Attributes

The section on "Definition and Attributes" within the policy document outlines the characteristics and parameters used to identify and differentiate deep tech startups from other types of startups. The formation of a working group is also mentioned to enable the creation of a definitive criterion for determining when a startup meets the qualifications for being classified as "deep tech." Such a criterion would assist different stakeholders in identifying and supporting deep tech startups more effectively.

The policy acknowledges the evolving nature of deep tech startups and their exploration of parameters such as maturity levels, applicability in different sectors, time frames, and geographical boundaries. This recognition is crucial as it reflects an understanding that the deep tech landscape is dynamic and subject to continuous change.

Issues:

Lack of Specifics on the Working Group: While proposing the establishment of a working group to identify viable deep tech startups, the policy does not provide specifics on the group's composition or selection criteria. To ensure impartiality and effectiveness, these details should be clearly defined. The WG should also study the definition of Deep Tech Startups as defined in different geographies globally.

Absence of Clear Implementation Plan: The policy outlines various attributes of deep tech startups and proposes surveys, but it lacks a clear and detailed implementation plan with timelines. Policymakers should provide step-by-step guidelines on how these proposals will be executed, who will be responsible for each task, and the timeline for implementation.

Time-Tagged Policy Measures: The National Deep Tech Startup Policy lacks a structured time-tagged strategy for policy measures, hindering the timely achievement of objectives and the ability to assess progress. Each measure should be linked to a specific implementation timeline and tagline to enhance transparency, accountability, and policy effectiveness, ultimately nurturing a dynamic ecosystem for deep tech startups in India.

SIA-India Suggestions/Recommendations:

1. **Specify Working Group Composition:** Clearly define the composition and selection criteria for the working group responsible for identifying viable startups, ensuring impartiality and alignment with global definitions of National Deep Tech Startups.
2. **Develop Detailed Implementation Plan:** Provide a comprehensive implementation plan with timelines, assigning responsibilities and specifying execution procedures for proposed attributes and surveys to enhance policy effectiveness.
3. **Time-tagged Strategy:** Implement time-tagged strategy with clear milestones for each policy measure to ensure effective implementation of the National Deep Tech Startup Policy

B. Objectives: Deep Tech Ecosystem Priorities

The objectives outlined in the policy document appear comprehensive, but one major objective that could be considered is *Promoting Interdisciplinary Collaboration*. Encouraging interdisciplinary collaboration between researchers, startups, and industry players from various scientific and technological domains can foster innovation and the development of unique solutions. This objective can emphasize the importance of breaking down silos between different fields of study and promoting collaboration to address complex challenges that require diverse expertise.

1. SIA-India recommends adding "**promoting interdisciplinary collaboration**" as a policy objective to enhance innovation and address complex global challenges in the deep tech ecosystem, aligning with the need for a collaborative approach.

C. Policy Priorities and Interventions

Nurturing Research, Development & Innovation

	Objectives & Problem Statements	Existing Initiatives	Initiatives Proposed
1	<ol style="list-style-type: none"> a) Increasing the Gross Expenditure on R&D (GERD). b) Promote participation of private patient capital investment. 	<p>At present, the academic system in the higher education institutes (HEI) of India provides limited incentive for faculty members to translate</p>	<ol style="list-style-type: none"> a) Formation of an organisation - The Centre for Deep Tech Translation [CDT] b) Implementing a Single Point of Contact (SPOC) model for the

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| <ul style="list-style-type: none"> c) Calibrate the existing research assessment practices for translating their knowledge outputs to entrepreneurial outcomes. d) Facilitate seamless partnerships between academic institutions, research labs, and industry players. e) Establishment of collaborative platforms and technology transfer offices within academic and research institutions. f) Provide guidelines to strengthen translation and commercialization of publicly funded research. | <p>their knowledge outputs to entrepreneurial outcomes as deep-science and deep-tech innovations as patents have little weightage in the annual appraisal of a faculty member.</p> | <p>Technology Transfer Office (TTO) in universities.</p> <ul style="list-style-type: none"> c) Online repository that provides comprehensive information on global research and innovation grants. d) Establishing dedicated funding schemes to support deep tech startups' participation in international conferences, workshops, and collaborative projects. e) Set up an Open Science & Data Sharing Platform to encourage collaboration and knowledge sharing. f) Create a framework that can be used by HEIs to incentivise faculty entrepreneurship, by suitably amending their appraisal policies. |
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SIA-India Suggestions/Recommendations:

1. We strongly endorse the emphasis on increasing the Gross Expenditure on R&D (GERD) with a balanced share of public and private investment. To facilitate private patient capital investment in deep tech R&D, we recommend creating **tax incentives or investment-friendly policies** that encourage private sector involvement in high-risk ventures.
2. The SPOC model for Technology Transfer Offices in universities is a positive step. We recommend that these **SPOCs receive specialized** training in IP assessment and commercialization strategies.
3. Furthermore, **creating a database of industry needs and challenges** could help match startups with relevant university expertise.
4. The proposed CDT is a valuable initiative. We suggest that it should operate with transparency and collaborate closely with industry stakeholders to identify high-potential research for commercialization. **Regular industry engagement and advisory input** could enhance its effectiveness.
5. We fully support the establishment of an Open Science & Data Sharing Platform. To ensure its effectiveness, it should **incorporate data security measures** and mechanisms for researchers to protect sensitive information while fostering collaboration.

Strengthening Intellectual Property Regime

	Objectives & Problem Statements	Existing Initiatives	Initiatives Proposed
1	<ul style="list-style-type: none"> a) Ensuring the novelty and uniqueness of inventions. b) Managing conflicts related to open-source technologies. c) Safeguarding the confidentiality of trade secrets. d) Conducting comprehensive searches for pre-existing innovations. e) Navigating the complexities of international intellectual property laws. f) Mitigating the risk of intellectual property being acquired by foreign entities. g) Strengthening India's presence in global intellectual property-related convention organizations and agenda-setting bodies. h) Ensuring effective cross-border protection of intellectual property. i) Including enabling provisions in Free Trade Agreements (FTAs) to extend support for the promotion of Indian intellectual property in global markets. 	<p>SIP-EIT Scheme: Supports Indian MSMEs and startups in filing international patents, offering financial reimbursement.</p> <p>BIRAC-PATH Scheme: A grant program aiding innovators supported by BIRAC in securing intellectual property rights.</p>	<ul style="list-style-type: none"> a) Develop a deep tech Single Window Platform. b) Establish a Unified IP Framework. Create guidelines for Design IPs. c) Implement strong cybersecurity protocols. d) Monitor access to confidential information. e) Streamline the patent application process. f) Create a unified HEI database. Build in-house patent capabilities in research institutes. g) Provide legal aid for cross-border IP breaches. h) Evaluate patent eligibility for digital frontier technologies. i) Offer training on novelty detection and open-source licensing. Define Government Purpose Rights (GPRs). j) Implement 'March-In' rights for strategic sector IPs.

SIA-India Suggestions/Recommendations:

SIA-India fully concurs with the proposed initiatives and suggests the following recommendations to enhance the proposed government initiatives

1. **Simplified Patent and IPR Registration:** There should be efforts to align the Indian registration process with international standards, making it more efficient and user-friendly.
2. **IP Retention Policy for Space Tech Startups:** Develop a policy similar to the Innovation for Defence Excellence (IDEX) program by the Ministry of Defence (MOD) to ensure that intellectual property is retained by space tech startups, fostering innovation and growth.
3. Develop guidelines and incentives for deep tech startups to engage in **open-source collaboration**. Encourage them to contribute to open-source projects and release non-core technologies as open-source to foster innovation and knowledge sharing.
4. **Offer patent valuation support** for deep tech startups in valuing their IP assets. Provide guidance on assessing the market value of patents, facilitating strategic decisions regarding IP management.
5. Develop a **robust legal framework** for enforcing intellectual property rights, particularly for deep tech startups. This includes efficient mechanisms for addressing IP infringement cases and protecting startup innovations.
6. Explore the possibility of introducing **IP insurance schemes** tailored to the needs of deep tech startups. This can help mitigate risks associated with IP infringement and litigation.

Facilitating Access to Funding

	Objectives & Problem Statements	Existing Initiatives	Initiatives Proposed
1	<ul style="list-style-type: none"> a) Slow and fragmented disbursement of government funds to startups b) Lack of long-term funding aligned with deep tech development cycles c) Limited funding availability for crucial field trials d) Working capital constraints for growing startups e) Uncertain market validation and societal impact demonstration f) High compliance and taxation burden on start-ups g) Heavy customs duty impact on imports h) Funding opportunities not aligned with industry needs i) Inadequate technical due diligence expertise Insufficient funding amounts and durations j) Complex technical validation for deep tech startups k) Emphasis on investment volume over capital commitment 	<p>Biotechnology Innovation Fund for AcE: Capital for startups via SEBI-registered AIFs.</p> <p>SIDBI Fund of Fund Scheme: Capital for growing startups through SEBI-registered AIFs.</p> <p>BIRAC SEED Fund: Bridge funding for BIRAC-funded incubators.</p> <p>Technology Development Fund (TDF): Funding for cutting-edge technologies, especially for MSMEs and startups.</p> <p>Credit Guarantee Scheme: Supports credit access for new entrepreneurs.</p> <p>Tax Exemptions: Tax benefits for investors and eligible startups.</p> <p>CLCSS Scheme: Financial aid for technology upgrades.</p> <p>iDEX Program: Collaboration with government grants for R&D.</p> <p>JanSamarth Portal: Digital platform for streamlined government schemes access.</p>	<ul style="list-style-type: none"> k) Establish common grant framework for deep tech startups. l) Government initiatives like Biotechnology Innovation Fund and SIDBI Fund through AIFs. m) BIRAC SEED Fund for incubators and funding gaps. n) Technology Development Fund for tech development. o) Credit Guarantee Scheme for improved credit access. p) CSR committee to amend laws for tech funding. q) Create dedicated fund (FoF) for deep tech startups. r) FoF with longer tenure to match startup gestation. s) Introduce thematic funds for specific sectors. t) Provide grants for Proof of Concept and Tested Prototype stages. u) Establish Debt Fund under SEBI for working capital. v) Public banks to offer specialized financial products. w) Introduce Technology Impact Bond (TIB) Model. x) Simplify regulations and improve taxation. y) Review angel tax and ESOP taxation. z) Consider custom duty exemptions or reduced tariffs.

SIA-India Suggestions/Recommendations:

1. Encouraging corporations to allocate **CSR funds to deep tech startups** is crucial. This can be incentivized through tax benefits. However, despite the liberalization of guidelines in 2021, the allocation of CSR capital to startups remains limited. Out of India's total CSR spending of over ₹20,000 crore, less than ₹100 crore is directed to incubators that can route funds to startups. Clear and structured guidelines aligned with CSR objectives are needed to enhance this support.
2. **Eased Payment Terms for Procurements** to alleviate the challenges faced by deep tech startups in accessing benefits from public procurements. It is advisable to revise procurement policies by making partial payments at earlier stages of project completion to ease financial burdens. Furthermore, providing clear guidelines for deep tech startups to access procurement benefits is essential.
3. **Tax policies** play a significant role in supporting deep tech startups.
 - a. **Extending the tax vacation period** for deep tech startups to at least seven years will provide them with a longer runway for growth. This is required, keeping in view, the longer runway from idea to revenue, that is typical of deep tech startups. Simplifying the process for startups seeking tax exemptions and removing barriers, such as tax notices during exemption applications, will streamline operations.
 - b. Regarding the Minimum Alternate Tax (MAT) during the initial 3-year tax vacation period out of 7 years, it can impose a financial burden, especially for deep tech startups. **Deferring the MAT liability from the 4th-14th year** could provide startups with more financial flexibility during their critical early years, allowing them to allocate resources more efficiently and increasing their chances of survival and success in the long run. This adjustment aligns tax policies more closely with the realities of startup financing and growth.
 - c. The space industry, like many deep-tech sectors, requires extensive research and development efforts before technology can lead to actual sales. During this R&D phase, startups often accumulate substantial **GST input credits** in their initial years. To optimize and ease the financial flow of these businesses, it is essential to establish a mechanism that allows startups with limited revenues to have alternative use of this fund for their working capital.
 - d. Furthermore, considering the unique challenges startups face in the space industry, **GST relaxation for startups engaged in large-scale government projects can be beneficial**. Large-scale government projects often involve extended payment terms, ranging from 90 to 180 days or even staggered payments. These payment terms can create significant financial pressure on startups, affecting their cash flow and operational capabilities.
 - e. Introducing a **waiver of capital gains tax for first-time secondary equity sales** by startup founders within five years can encourage investment. Allowing startups to issue ESOPs to founders should be considered.
 - f. **Revise taxation policies related to ESOPs** to ensure that ESOPs are taxable on the sale of shares instead of taxability on the allotment, as ESOPs in deep tech start-ups are difficult to liquidate. This should be available for all Startup India recognised deep tech startups without additional qualifications.
4. **Liberalizing domestic investment regulations** to attract more funding from venture capitalists and **simplifying the process for foreign direct investment (FDI)** will enhance India's startup ecosystem and foster international investor confidence.

6. **Well-defined exit strategies** are crucial for investors and entrepreneurs because they provide a roadmap for achieving financial goals and managing risks.
7. Offer **interest rate subsidies for startup loans** to make early-stage borrowing more affordable, as startups often struggle to secure loans due to the lack of collateral. Lending rates for startups is up to three times higher than in developed economies, with many banks treating startup loans as subprime assets. This limited lending availability, especially for pre-Series A startups, forces some to borrow at exorbitant interest rates. Ensuring access to working capital and liquidity at competitive market rates can empower founders to create value in their ventures before considering equity dilution.

Enabling Infrastructure Access and Resource Sharing

	Objectives & Problem Statements	Existing Initiatives	Initiatives Proposed
1	<ol style="list-style-type: none"> a) Limited access to scientific infrastructure, academic labs, and equipment due to high upfront costs. b) Insufficient access to diverse datasets from sectors like space, health, and agriculture, limiting innovation opportunities. c) Lack of domain expertise and data interpretation skills, hindering complex data analysis. d) Delays in product development and refinement due to restricted testing and validation facilities. e) Inadequate co-working spaces and research facilities, hindering collaboration among startups. f) Limited knowledge exchange and innovation due to a lack of interaction with global startups. g) Difficulties in procuring critical equipment, discouraging startups. h) High depreciation rates for electronic items, posing challenges for equipment procurement. 	<p>Access to infrastructure through organizations like SID at IISc, NCCRD at IIT-M, and NCBS for biotech startups.</p> <p>Support from NCL Venture Centre, C-CAMP, and AIRAWAT at C-DAC, Pune, for infrastructure and incubation.</p> <p>Availability of advanced equipment and infrastructure at T-HUB in Hyderabad.</p> <p>Initiatives like I-STEM to enhance the efficient utilization of scientific equipment.</p> <p>Policies such as the National Data Sharing and Accessibility Policy 2012 and the Indian Space Policy 2023 to facilitate data access and dissemination.</p>	<ol style="list-style-type: none"> a) Establish Frontier Scientific Infrastructure (FSI) in academic institutions and R&D establishments, funded through various means, including infrastructure bonds, budget allocation, and private investment. b) Encourage universities to open labs for startups with nominal fees and centralize equipment information through Institution Innovation Councils (IICs). c) Facilitate data access for startups, ensuring data security protocols are in place. Enhance data availability and quality through partnerships and data trusts. d) Provide startups with comprehensive insights through fee-based data access, combining large datasets with specialized domain knowledge. e) Grant access to standardized test sites for validation, particularly in sectors like defence and space.

- f) Promote collaborations between domestic and international startups by facilitating co-working spaces and research sharing.
- g) Allow startups to retain capital equipment for R&D without return obligations or pro-rata expenditure, fostering innovation.

SIA-India Suggestions/Recommendations:

1. **Introduce financial incentives for academic institutions and R&D establishments** to actively engage with startups and provide them with access to infrastructure.
2. Create a **network of standardized test beds** across various sectors, making it easier for startups to access testing facilities.
3. Needs easy and subsidized access to the labs and facilities in **time bound manner**
4. Establish **data repositories within infrastructure-sharing hubs**, making valuable datasets and research findings accessible to startups using shared resources.
5. Implementing a robust scheme modeled after the successful Defense Testing Infrastructure Scheme (DTIS) for the space industry as **“Space Industry Testing Infrastructure Scheme (SITIS)” for Accelerated Growth**. This initiative will not only expedite access to essential testing facilities but also catalyze critical investments necessary for the sector's growth in the coming decade. Similar to the DTIS, allocating an initial budget of Rs 400 crore over five years, with 75% government funding for the Testing Infrastructure, and the remaining 25% shared by implementation agencies, state governments, or private entities, will be pivotal in supporting the deep tech sector's expansion.

Creating Conducive Regulations, Standards and Certifications

	Objectives & Problem Statements	Existing Initiatives	Initiatives Proposed
1	<ul style="list-style-type: none"> a) Rapid technological evolution outpaces regulations, leading to oversight gaps. b) Balancing innovation and regulation is vital; excessive rules stifle growth, while lax oversight risks safety. c) Complex emerging technologies like AI challenge regulators. d) High certification costs divert startup resources from R&D. e) Foreign market dominance hinders domestic innovation. f) Ambiguous regulations delay startup product development. g) Startups need supervised experimentation avenues. h) Data access issues limit startups' use of large datasets. i) Regulatory standards are crucial for system interoperability. j) Collaborative global regulatory frameworks uphold ethics and standards for startups expanding into international markets. 	<p>Reserve Bank of India's Regulatory Sandbox: Successful implementation of regulatory sandboxes for Financial Technology areas including Retail payments, Cross-border payments, MSME financing, and Fraud Prevention. The RBI's FinTech Unit oversees the sandbox, fostering competition and enhancing customer protection.</p> <p>Certification Scheme for Unmanned Aircraft Systems (UAS): Launched by the DGCA and Quality Council of India (QCI) to certify UAS technology systems and authorize testing entities. Specifies criteria for UAS type certification and authorizing testing, with DGCA issuing Type Certificates, QCI owning the Certification Mark(s), and NABL accrediting testing labs.</p>	<ul style="list-style-type: none"> h) Organize sessions for regulatory alignment involving agencies, startups, experts, and academia to shape tech-friendly regulations. i) Establish regulatory sandboxes for controlled tech experimentation, gathering evidence for informed regulations. j) Provide subsidies within tech development grants for certification costs and relax early-stage standards to promote innovation. k) Engage global stakeholders in defining sector-specific certification standards while maintaining Indian control. l) Create a comprehensive regulatory compliance catalog for all deep tech startups to access. m) Develop protocols and guidelines for subsystem integration across various technologies. n) Encourage contextual regulatory frameworks for deep tech startups to access government-owned research data securely.

SIA-India Suggestions/Recommendations:

1. **Integrating economics into the policy framework** for conducting continuous economic impact assessments to ensure that startups generate value, stimulate growth, and flourish within the broader market economy.
2. Need **policies or guidelines for data privacy and security which are easy to comply with**, especially for startups dealing with sensitive data in deep-tech areas like AI and biotechnology.
3. Extend **the startup validity period** for deep tech start-ups for another 4 years. Deep tech innovations have longer gestation periods before they can be fully commercialized. With an extended validity period, these startups have a better chance to validate their technology in the market and refine their strategies.
4. The new national deep tech startup policy should serve as uniform national guidelines for startup policies to eliminate variations among states, ensuring consistent support and market access for startups across the country. **Inclusion of Deep Tech Startup Policy at the State Level** to promote opportunities for startups and have a unified set of policies for startups across the nation.
5. **Single platform to see and understand all the regulations** under the space sector (This includes Geospatial, Launch Vehicles, SCOMET, NPT, MTCR, SATCOM, and various others) or any other possible way. The establishment of a single platform for comprehending and navigating space sector regulations is pivotal. It not only serves the immediate goal of simplifying regulatory compliance but also lays the foundation for a resilient, innovative, and internationally competitive space industry.
6. Having a **certification facility within India** can help avoid certification expenses, reducing the financial burden on businesses and fostering a conducive environment for growth. For instance, in the case of deep tech startups in fields like artificial intelligence or space technology, local certification facilities can expedite product development cycles and make them more competitive on a global scale, ultimately propelling India as a hub for cutting-edge innovation.
7. Incorporate a **well-defined mechanism within policies for governance and monitoring**. Implement an annual review process to assess policy objectives' effectiveness and adapt policies based on regular assessments to respond to changing circumstances.

Attracting Human Resource & Initiate Capacity Building

Objectives & Problem Statements	Existing Initiatives	Initiatives Proposed
<p>1</p> <ul style="list-style-type: none"> a. Limited representation from Tier II/III cities and marginalized communities. b. Gender disparity in STEM fields despite high graduate percentages. c. Limited access to research labs and institutions for entrepreneurs from smaller towns. d. Intense competition for skilled professionals in deep tech and brain drain. e. Disproportionate VC funding for women-led startups. f. Lack of innovation in domains like childcare, nursing, etc. g. Limited access to resources, finance, and networking for deep tech founders. h. Insufficient recognition and visibility for women entrepreneurs. i. Lack of transparency in diversity and equal opportunity practices. j. Knowledge gap and reluctance to reveal IP between investors and startups. k. Absence of deep tech-focused university programs and mentorship. l. Inadequate in-house capacity for evaluating deep tech startups. m. Limited opportunities for master's students in deep tech research and internships. n. Cultural barriers to embracing risk and innovation. 	<p>Digital India BHASHINI: Providing Internet access and digital services in native languages, bolstering AI and NLP resources for MSMEs.</p> <p>Digital India GENESIS: Aims to boost tech ecosystem, supporting 10,000 startups from Tier-II and Tier-III cities.</p> <p>Women in STEM Initiatives: Includes Women Scientist Scheme, BioCare, and Women-only Incubation centers to encourage women's participation in STEM fields.</p> <p>Drone School by Ministry of Civil Aviation to develop skills in the drone services sector.</p> <p>MAARG Program: Facilitates accessible mentorship for startups.</p> <p>Startup India: Connects the Indian startup ecosystem globally through partnerships, forums, and events.</p> <p>IN-SPACE: Provides technological support to startups in the space sector with expertise from retired ISRO professionals.</p> <p>National Education Policy (NEP) 2020: Recommends the inclusion of contemporary subjects like AI in the curriculum, with NCERT and CBSE working on introducing AI courses at secondary and higher levels.</p>	<ul style="list-style-type: none"> a. Incentives for talent retention through skill enhancement grants and grant matching programs. b. Mandated government grants and incentives for women-led startups to promote gender diversity. c. Dedicated grant program for innovation in underinvested domains like childcare and nursing. d. Mentorship and experiential opportunities for entrepreneurs from Tier II/III towns and cities. e. Common platform for networking and collaboration among deep tech entrepreneurs, investors, and experts. f. Awards and recognition programs to acknowledge achievements of women in deep tech. g. Diversity reporting and equal opportunity practices to ensure inclusive work environments. h. Institutional arrangement for mentorship and guidance in securing funding. i. Specialized courses, workshops, and incubation centers within universities for deep tech. j. Government capacity building to assess startup commercial viability and potential. k. Integration of tinkering, deep research, and prototype-based projects in master's curriculum. l. Internships in deep tech startups for graduate/postgraduate students. m. Establishment of domain-specific schools focusing on AI, robotics, quantum computing, etc.

- n. Streamlining taxation regime on Employee Stock Option Plans (ESOPs) for startups.
- o. Building a culture of innovation through media campaigns and celebrating startup successes.

SIA-India Suggestions/Recommendations:

1. While most of the initiatives aim to boost digital inclusion and the tech ecosystem, there is a need for more **specific details regarding the implementation and impact assessment** to ensure they effectively reach their goals.
2. **Investing in educational programs** that cultivate skilled professionals in DeepTech fields like AI, Drones & UAVs, Spacetech, biotechnology, and quantum computing should go beyond just including these subjects in the curriculum. It should involve a comprehensive approach that encompasses not only teaching these subjects but also promoting hands-on practical experience, research opportunities, industry collaborations, and internships.
3. Establish a **uniform policy for scientists and professors** to initiate start-ups, both nationally and internationally, removing bureaucratic obstacles. Encourage and enable academics to collaborate with private industries for knowledge transfer and skill development, benefiting both academia and industry.

Overall, the proposed initiatives have the potential to contribute positively to the startup ecosystem. However, their success will depend on **effective implementation, transparency, adaptability, and continuous evaluation** to ensure they address the intended objectives and challenges effectively.

Promoting Procurement & Adoption

	Objectives & Problem Statements	Existing Initiatives	Initiatives Proposed
1	<ul style="list-style-type: none"> a. Barriers like eligibility criteria and competition deter startups from public procurement. b. Startups face difficulties in validating their products due to inherent risks. c. Larger firms' involvement in procurement disadvantages startups. d. Extended product development cycles misalign with immediate government goals. e. Gaps in supply chain networks hinder progress in long-gestation deep tech domains. f. Grand challenges often fail to translate into procurement opportunities. g. Lack of equitable treatment measures for startups, simplifying processes and excluding larger firms. h. Lack of facilitating joint research opportunities to develop tailored solutions between startups and government. 	<p>Kerala implements startup-friendly procurement policies, providing tender relaxations, direct purchasing up to Rs 20 Lakhs, and IT procurement up to Rs 100 Lakhs for registered startups.</p> <p>Initiatives like the Technology Development Acceleration Cell (TDAC) and Technology Development Fund (TDF) ensure Minimum Order Quantity (MOQ) guarantees, promoting collaborative R&D and scalability.</p>	<ul style="list-style-type: none"> a. Utilize public procurement as an initial market for deep tech startups. b. Implement strategies like procurement signaling, minimum mandates, and project unbundling for startup engagement. c. Conduct programs to educate decision-makers on prioritizing technology in government spending. d. Strengthen grievance redressal for startup policies, including relaxed Bid Qualification Criteria. e. Explore exemptions from Bank Guarantees for R&D projects and startups competing with larger entities. f. Simplify tender processes, separate startup-related documents, and offer preferences for successful pilots. g. Prioritize prompt invoice settlements for stable cash flows. h. Prevent unfair competition by excluding larger firms in startup procurement based on turnover or employee size. i. Replace Liquidated Damage clauses with goal-based incentives and strict turnaround times. j. Equalize Advance Payment Bank Guarantee requirements for startups and large companies. k. Collaborate with startups for R&D, milestone-based funding, and small-scale procurement. l. Showcase deep tech case studies and organize events with industry associations to engage potential adopters. m. Mandate purchases of domestically developed tech in public tenders, limited to Transfer of Technology holders. n. Include subcontracting plans in large government contracts to involve small businesses and startups. o. Connect grand challenge winners to Minimum Order Quantity procurement. p. Establish specialized funding programs to bridge financing gaps in deep tech value chains, supporting long-gestation domains

SIA-India Suggestions/Recommendations:

1. To streamline and incentivize the procurement process for startups, it is imperative to **prioritize Indian startups over foreign companies in government contracts** whenever feasible.
8. **Relaxing financial qualification criteria (QC) and earnest money deposit (EMD) requirements** for government projects to create an equitable and innovative procurement landscape.
2. Adopt innovative approaches **like procuring Proof of Concept (POC) demonstrations or project pilots** supportive innovation.
3. **Collaboration with industry associations** can help tailor these initiatives to the specific needs of the deep tech startup ecosystem. Industry associations have a deep understanding of the challenges and opportunities within their sector. Collaborating with them allows policymakers to conduct a comprehensive needs assessment to identify the specific pain points faced by deep tech startups. We suggest **including associations in the various groups formed** entails inviting representatives or members of industry associations to actively participate in the working groups or committees that are established to shape and implement policies and initiatives for the deep tech startup ecosystem.

Enhancing Policy & Program Interlinkages

Objectives & Problem Statements	Existing Initiatives	Initiatives Proposed
<p>1</p> <ul style="list-style-type: none"> i. Fragmented Policies, Programs, and Missions for Deep Tech Startups j. Lack of Comprehensive Policy Support, Hindering Holistic Growth k. Funding Redundancy and Lack of Coordination Among Incubators and Agencies l. Limited Collaboration and Resource Sharing Across Sectors m. Bureaucratic Hurdles and Complex Administrative Processes n. Limited International Market Access for Indian Deep Tech Startups o. Insufficient Capacity for Science and Technology Cooperation p. Limited Attractiveness for Foreign Deep Tech Startups q. Import Dependencies for Critical Minerals and Advanced Materials r. Lack of Long-Term Manufacturing Capabilities for Strategic Materials s. Import Dependencies in Key Technology Domains and Supply Chains. 	<p>iTNT Hub: Tamil Nadu's initiative for deep tech startup growth.</p> <p>TIDE 2.0 Scheme: A program nurturing tech startups.</p> <p>NGIS: Supports startups with a focus on deep tech.</p> <p>SERB-SUPRA Grant: Funds deep tech research and innovation.</p> <p>SERB-FIRE Program: Facilitates international exposure for researchers and startups.</p> <p>NECTAR: Assists deep tech startups with various programs.</p> <p>National Supercomputing Mission: Promotes supercomputing R&D.</p> <p>National Quantum Mission: Advances quantum tech, including startups.</p> <p>National Education Policy 2020: Shapes India's education landscape.</p> <p>Indian Space Policy: Enables non-government space activities.</p> <p>NEST Division: Promotes international tech cooperation.</p> <p>Trade and Tech Council (EU): Facilitates EU collaboration.</p> <p>India-US iCET Initiative: Coordinates innovation with the US.</p> <p>ITA-I: Influential tech trade agreement in 1997.</p>	<ul style="list-style-type: none"> a. Inter-Ministerial Committee: Form a cross-government committee for deep tech startup alignment. b. Comprehensive Startup Support: Provide funding, infrastructure, and compliance guidance for startups. c. Simplified Regulations: Establish a streamlined, single-window regulatory process. d. Cohesive Funding: Avoid duplication and exercise due diligence in startup funding. e. Sector Collaboration: Identify synergy opportunities between sectors for innovative collaboration. f. Global Alignment: Align policies with international standards for attracting foreign investments. g. Global Market Access: Explore various avenues for enhancing global market access for startups. h. Trade Barrier Study: Analyze the impact of trade barriers on startups and industry. i. Capacity Building: Develop in-house capabilities for science and tech cooperation. j. International Tech Policy: Create a comprehensive international policy for the deep tech ecosystem. k. Attracting Foreign Startups: Incentivize and support foreign deep tech startups. l. Strategic Materials Development: Identify and develop advanced materials for critical applications. m. Reducing Import Dependencies: Create a roadmap to minimize import reliance and address supply chain risks.

SIA-India Suggestions/Recommendations:

1. Enhancing access to international markets through **government-to-government (G2G) collaborations** is crucial. It's beneficial to follow the model used by some countries, where their consulate actively promotes startups directly to corporates in foreign countries. Strengthening such channels and partnerships can yield significant advantages for Indian startups looking to expand globally. **Establish "Startup Desks" at Indian Embassies/Consulates** to help startups access global markets. Pilot programs should vet technologies for adoption on a large scale.
2. **Foster partnerships with international incubators and accelerators** to facilitate cross-border startup support and networking.
3. **Create streamlined visa programs for foreign entrepreneurs and investors**, encouraging them to contribute to India's startup ecosystem.
4. Develop **international mentorship networks** connecting experienced entrepreneurs with Indian startups to provide valuable guidance and global market insights.
5. Promote **interdepartmental coordination** to ensure that policies and programs for startups are complementary and not redundant or overlapping. For instance, a space startup focused on satellite technology might benefit from collaboration between the Ministry of Science and Technology, responsible for research and development funding, and the Ministry of Communications, which manages satellite communications. By coordinating efforts, these departments can create a streamlined and comprehensive support system for startups in this sector, eliminating redundancies and maximizing the impact of their initiatives.

Sustenance of Deep Tech Start-ups

<i>Objectives & Problem Statements</i>	<i>Initiatives Proposed</i>
<p>1</p> <ul style="list-style-type: none">a. Insufficient funds for crucial activities (technology development, commercialization)b. Decline in seed investments, mismanagement of funds, improper resource allocationc. Limited availability of skilled personnel, human resources, suitable facilitiesd. Challenges in establishing successful partnerships with research institutese. Lack of collaboration mechanisms, hindering access to expertise and resourcesf. Strong technical knowledge but limited understanding of business operations and market dynamicsg. Inadequate time for commercialization, bureaucratic delays, poor technology developmenth. Institutional pressures, high initial costs, social resistance, and cultural challenges	<ul style="list-style-type: none">a. Identify use cases and anticipate risks for tech solutions; develop failing-by-design funding programs for early-stage adaptation.b. Provide sustained incentives and financing across R&D stages (TRL 1 to TRL 10); establish success matrix for funding rejections.c. Explore diverse funding sources (government grants, non-dilutive programs, corporate venture funds) to mitigate financial risks.d. Foster partnerships with strategic investors for financial backing, industry expertise, networks, and customer access.e. Establish a central mission office for deep tech startup support over 5-10 years, with thematic sub-verticals for tailored strategies.f. Foster international partnerships, innovation, and support for deep tech startups to excel on the global stage.g. Simplify approval processes for experiments, IP protection, and regulatory exemptions to expedite progress.h. Recognize varying funding needs at seed, mid, and late stages; ensure funding mechanisms align with development phases.i. Create platforms for collaboration and knowledge sharing in tier II and III cities to enhance deep tech awareness.j. Develop KPIs for measuring deep tech startup success, including technology commercializations, revenue growth, patents, and ROI.

SIA-India Suggestions/Recommendations:

1. The presence of sovereign liabilities within global treaties, especially concerning space assets, is essential for promoting responsible and safe space operations. **Clear liability rules**, when implemented, enable the government to establish accountability and safeguard both private entities and the public from potential risks associated with space activities.
2. Launch risk mitigation programs that provide **insurance or financial support** in case of project failures or unforeseen challenges.
3. The necessity of distinct regulations and considerations tailored to start-ups and established companies within the **Ease of Doing Business (EODB) framework**.

Summary of SIA-India Recommendations

Policy , Funding & Tax Framework:	Support for Startups & Capacity Building:	Global Integration and Market Access:
<ol style="list-style-type: none"> 1. Specify Working Group Composition. 2. Develop a Detailed Implementation Plan. 3. Time-tagged Strategy. 4. Integrating Economics into the Policy Framework 5. Simplified Patent and IPR Registration. 6. IP Retention Policy for Space Tech Startups. 7. Incorporate Data Security Measures easy to comply. 8. Robust legal framework for enforcing intellectual property rights 9. Patent Valuation Support. 10. IP Insurance Schemes. 11. Clear liability rules 12. Insurance or Financial support 13. CSR funds to deep tech startups 14. Eased Payment Terms for Procurements. 15. Extending the tax vacation period 16. Deferring the MAT liability from the 4th-14th year 17. Optimizing GST Input Credits for Early-Stage Space Startups 18. Waiver of Capital Gains Tax. 19. GST relaxation for startups engaged in large-scale government projects 20. Revise Taxation Policies for ESOPs. 21. Liberalize Domestic Investment Regulations. 22. Interest Rate Subsidies for Startup Loans. 23. Simplifying the process for foreign direct investment (FDI) 	<ol style="list-style-type: none"> 24. Introduce financial incentives for academic institutions and R&D establishments 25. Network of Standardized Test Beds. 26. Access to the Labs and Facilities in Time Bound Manner 27. Data Repositories in Infrastructure-Sharing Hubs. 28. Proposing a Space Industry Testing Infrastructure Scheme (SITIS) for Accelerated Growth 29. Continuous Economic Impact Assessments. 30. Extended Startup Validity Period by 4 Years 31. Inclusion of Deep Tech Startup Policy at the State Level 32. Single Platform for Space Sector Regulations. 33. Certification Facility in India. 34. Governance and Monitoring Mechanism. 35. Regular industry engagement and advisory input 36. Promote Interdisciplinary Collaboration. 37. SPOCs and Specialized IP Training for Technology Transfer Offices. 38. Building an Industry Needs Database 39. Create a separate fund or corpus dedicated to space tech startups 40. Fostering Open-Source Collaboration among Deep Tech Startups 41. Well-Defined Exit Strategies. 42. Investing in educational programs 43. Uniform Policy for Scientists and Professors 	<ol style="list-style-type: none"> 45. Priority for Indian Startups in Government Contracts. 46. Relaxation of financial qualification criteria (QC) and earnest money deposit (EMD) requirements 47. Innovative Procurement Approaches like POC and Project Pilot. 48. Collaboration with Industry Associations. 49. Partnerships with International Incubators. 50. Establish "Startup Desks" at Indian Embassies 51. Create Streamlined Visa programs for Foreign Entrepreneurs and Investors 52. International Mentorship Networks. 53. Interdepartmental Coordination. 54. Launch Risk Mitigation Programs.

