

# **Innovation in Defence Sector: Examining role of Partner Incubators in iDEX**

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**By**

**Cmde N C Mamgain**

**(Roll No 4912)**

**Under the guidance of**

**Prof. (Dr.) Nupur Tiwary**



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### **Glossary of Terms**

AIM	Atal Innovation Mission
ARISE	Applied Research and Innovation in Small Enterprises
BIRAC	Biotechnology Industry Research Assistance Council
DIF	Defence Innovation Fund
DIPP	Department of Industrial Policy & Promotion
DMA	Department of Military Affairs
DPIIT	Department for Promotion of Industry and Internal Trade
DPSU	Defence Public Sector Undertaking
DTIS	Defence Testing Infrastructure Scheme
EIR	Entrepreneur In Residence
FDI	Foreign Direct Investment
HPSC	High Powered Steering Committee
iDEX	Innovation for Defence Excellence
iIH	iDEX Investors Hub (iIH)
IMPACT	<b>INDUS-X</b> Mutual Promotion of Advanced Collaborative Technologies
INDUS-X	India-United States Acceleration Ecosystem
ITRI	Industrial Technology Research Institute, Taiwan
NIDHI	National Initiative for Developing and Harnessing Innovations
NSTEDB	National Science & Technology Entrepreneurship

	Development Board
OECD	Organization for Economic Cooperation and Development
PDB	Product Development Budget
PIL	Positive Indigenisation List
PRAYAS	Promotion and Acceleration of Young and Aspiring technology entrepreneurs
SISFS	Startup India Seed Fund Scheme (SISFS)
SIDBI	Small Industries Development Bank of India
TDB	Technology Development Board
TDF	Technology Development Fund
UBI	University Business Incubators
USIBC	US-India Business Council
WAIPA	World Association of Investment Promotion Agencies

## **Executive Summary**

India's defense industry has always been the center of innovation. The nation has traditionally prioritized lowering imports, especially those related to defence equipment. When DRDO was established, its mission was to handle indigenous defence hardware. Recent government programs like "make in India" and "atma nirbhar bharat" have been initiatives towards helping to increase the nation's self-reliance. Many Government ministries like Science and Technology, Biotechnology, Meity, and Commerce and Industry and Niti Ayog had launched various schemes that have fostered innovation and supported startups and MSMEs. These initiatives, including Invest India, Startup India, Make in India, NIDHI PRAYAS, NIDHI EIR, and BIRAC, have helped MSMEs and startups grow and promoted an innovative culture. Comparably, in the defense sector, Innovations for Defence Excellence (iDEX) scheme was introduced as late as in 2018 and, as a result of its early success, received the PM's award of excellence in 2021.

iDEX (Innovations for Defence Excellence) scheme, aims to foster innovation and indigenization in the defence sector by engaging Startups and MSMEs. Over the last six years, the progress of the iDEX scheme has been significant, with the implementation of several challenges and the involvement of various stakeholders such as the Armed Forces, Defense PSUs, and other ministries. Apart from start-ups/MSMEs, Nodal agencies, DIO, and Partner Incubators play a significant role in the iDEX ecosystem.

Incubators play a crucial role in any innovation ecosystem. In our country a large number of incubation hubs have been created since 1991. IIT Delhi and IIM,

Ahmedabad were among the few to start their incubation cell early. Out of this big pool of incubators, a total of 28 have been onboarded into iDEX scheme by DIO and they are termed as Partner Incubators in the iDEX ecosystem. These Partner incubators serve as mentors to MSMEs and startups, providing guidance in both technical and business domains. By partnering with iDEX-DIO (Defence Innovation Organisation), these incubators ensure that innovators receive the necessary support and resources to develop their ideas and products for the defence sector.

However, to maintain the momentum and ensure the effectiveness of the iDEX scheme, it's essential that government policies adequately motivate partner incubators to function optimally. This might involve providing financial incentives, streamlining bureaucratic processes, and offering capacity-building programs for the staff of partner incubators. While Partner Incubators work in line with the guidelines provided by iDEX-DIO, it's essential to assess whether they have met the aims and objectives prescribed to them. It is critical to evaluate the contribution Partner Incubators provide to innovation in the Defence sector and investigate areas where the iDEX policy framework may be strengthened. This evaluation should consider factors such as the number of successful innovations produced, the level of support provided to startups and MSMEs, and the overall impact on the defence innovation ecosystem. Taking into account the present performance of Partner incubators, the progress of product development by start-ups and MSMEs and their feedback, what should be the steps taken to improve the processes related to partner incubators in iDEX ecosystem to make it more productive and efficient?

Numerous startups are expressing interest in these problems, and many of them have successfully finished their product testing and begun producing defence-related goods on a commercial basis.

A thoughtful combination of quantitative and qualitative research methodologies were used in the approach of the study. For the study, the primary source of data was collected from select Partner Incubators located at various part of the country through a questionnaire. Visits to selected Partner Incubators were made to establish better understanding of the working of innovation hubs. A questionnaire was also circulated to iDEX winners to obtain their experience with Partner Incubators. Discussions with Service HQs and HQ Integrated Defence Staff and limited start ups and MSMEs were undertaken to understand the working of each department and their interdependency between each other. The secondary source of data were obtained through records at Service HQs and available through documents released by DIO/Ministry of Defence.

Amongst the Partner Incubators onboarded with iDEX, only few PIs which were onboarded during early phase of iDEX have large number of start ups/MSMEs working on iDEX challenges. These include SINE(36), IIT Bombay, FITT(35), IIT Delhi, Forge(42), Coimbatore, ITIC(43), IIT Hyderabad, and T-Hub(45), Hyderabad with their respective number of active projects. From the detailed survey of these 5 PIs, it is found that the number of projects which these PIs have completed vary from 1-4, Most of the ongoing projects are delayed from the contractual timelines, and the percentage of projects dropped midway is approximately 3%. All five PIs have the required infrastructure and resources to provide technical and business support with good network of external experts and agencies particularly for funding requirements. A total of 16

procurement orders have already been placed on the iDEX Start-Ups/MSMEs amounting to a total of Rs. 564 Cr post successful trials of their products. Majority of the PIs which were onboarded in last two years are either have no iDEX challenges or have very few projects in hand.

Based on the role of PIs and understanding the requirement of Start Ups and MSMEs post discussion with few of the Start Ups, the priority requirement of Start Ups/MSMEs was sought in the questionnaire. Inputs from approx. 10% of iDEX challenge winners were received on the questionnaire. The rating of the support of PI on technical aspect of product development, business development, conduct of trials and Patenting was obtained from the respondents.

Out of the five different support expected from PI, technical support was the most common requirement of the Start ups. On case to case basis, other support such as Assistance for release of funds from DIO, Requirement of funds for scaling up of Business and Raising the ceiling amount of Matching Contribution(MC), were also the priorities of the Start Ups & MSMEs. Other specific support sought included preparation of presentation, HR/Finance functional support, Other models of revenue sources, navigating the complex documentation process of iDEX, and compliance of legal aspects.

The iDEX initiative represents a significant step forward in fostering innovation within the Defence sector. By actively engaging partner Incubators (PIs), the initiative creates a platform for startups to contribute their innovative solutions to address the evolving challenges faced by the defence industry.

The Ministry of Defence has meticulously crafted a framework to facilitate the iDEX scheme, aimed at promoting innovation within the Defence sector. Continual refinement and enhancement of the scheme over the past six years underscore the Ministry's dedication to fostering an environment conducive to innovation and entrepreneurship in Defence.

Partner Incubators (PIs) have played a commendable role in nurturing and supporting startups within the iDEX ecosystem. The success of the iDEX initiative owes much to the dedication and expertise of these PIs in guiding startups through the various stages of development.

As the challenges facing the Defence sector continue to evolve, there is a pressing need to expand the network of incubators participating in the iDEX scheme. While existing PIs have demonstrated their capability, the increasing demand for innovative solutions necessitates the involvement of additional incubators. Furthermore, established PIs may need to scale up their operations to accommodate a broader scope of challenges, recognizing that nurturing startups often requires sustained support over an extended period. Towards this PIs need to have more number of technically qualified people to understand the issues being faced by the start ups. The head of the incubation cell of Academic Institutions need to be Professor emeritus with years of experience in the field of innovation.

To effectively address Defence requirements, it is imperative for PIs to develop specialized knowledge and expertise in the domain. This could involve either establishing dedicated Defence-focused incubators or incorporating Defence verticals within existing incubation facilities. By enhancing their understanding of Defence needs and constraints,

PIs can better guide startups in developing solutions that align with strategic priorities and operational requirements.

Partner Incubators could be entrusted with the responsibility of nurturing startups until they reach a point of sustainability and self-sufficiency. By doing this, the Partner Incubators are to reduce the number of failing start-ups. By setting clear milestones and providing targeted support, PIs can help startups navigate the critical stages of development and transition towards independence. This approach not only ensures the continuity of support but also instils a sense of confidence and stability within the start-up ecosystem.

Incentivizing partner incubators through awards, recognition, and competitive funding can be an effective strategy to encourage performance and foster a culture of excellence within the incubator network. Define clear and measurable performance metrics for partner incubators to track their progress and outcomes. DIO can facilitate opportunities for partner incubators to collaborate, share resources, and learn from each other's experiences. Encourage the formation of peer networks and communities where incubators can exchange insights, collaborate on joint initiatives, and leverage each other's strengths. By fostering a culture of collaboration and knowledge sharing, partner incubators can collectively drive greater impact and contribute to the growth of the entrepreneurship ecosystem. A central repository of Subject Matter Experts from available PIs can be identified by DIO and promulgated so that right person can be referred for a requirement. Centralising the iDEX ecosystem similar to model followed by BIRAC wherein experts are available on the system portal is one such example.



Start Ups and MSMEs are the Engines of the complete iDEX ecosystem. Their technical acumen, risk taking abilities and enthusiasm towards Atmanirbhar Bharat should not be underestimated. At all times, the environment given to them should be a friendly one to keep them motivated. It is very likely that in performing the PI functions, the freedom of Start Ups is lost. It may be time constraint, safety of design parameters, innovative technology, rights of patent etc. Requirement of sharing of data, technical know how should be allowed to be Start Ups choice and interests of start ups should always be protected. Necessary audit on the human behaviour aspect should be conducted from time to time.

As we navigate toward path of innovation, by understanding the needs of start-ups/MSMEs, improving their interaction with other stakeholders of iDEX ecosystem and striving to continuously adapt would go a long way in our quest for self-reliance in Defence sector.

## **Chapter -1: Introduction**

### **1.1 Background**

Since India's independence, achieving self-reliance in defence has been a primary goal, yet the country remains the largest importer of defence equipment globally. With an estimated expenditure of USD 220 billion in the next decade for modernization, the need for innovation in defence is crucial. Recent government initiatives like Make In India, Startup India, Invest India and Atal Innovation Mission aim to promote innovation and entrepreneurship in all sectors, and the latest initiative being the iDEX for particularly in defence manufacturing. The Ministry of Defence seeks to create an ecosystem fostering innovation by engaging with R&D institutes, academia, industries, startups, MSMEs and individual innovators to keep pace with technological advancements and ensure national defence capabilities surpass potential adversaries.

### **1.2 Focus on Defence Sector**

The Indian Defence sector, the second largest armed force is at the cusp of revolution. The Government has identified Defence and Aerospace sector as a focus area for the 'Aatmanirbhar Bharat' or Self-Reliant India initiative, with a formidable push on the establishment of indigenous manufacturing infrastructure supported by a requisite research and development ecosystem.

In the Union Budget 2023-24, the Capital Allocations pertaining to modernisation and infrastructure development of the Defence Services has been increased to INR 1,62,600 Cr representing a rise of 6.7% over FY 2022-23. The industry gets INR 5.94 Lakh Cr in Budget 2023-24, a jump of 13% over previous year.

Ministry of Defence has set a target of achieving a turnover of INR 1.75 Lakh Cr in aerospace and defence Manufacturing by 2025, which includes exports of INR 35,000 Cr. Till Apr 2023, a total of 606 Industrial Licences have been issued to 369 companies operating in Defence Sector.

To support the domestic defence industry the government aims to ensure transparency, predictability, and ease of doing business by creating a robust eco-system and supportive government policies. Towards this end, the government has taken steps to bring about de-licensing, de-regulation, export promotion and foreign investment liberalization. The Department of Military Affairs (DMA) has promulgated four Positive Indigenisation Lists comprising 411 military items. Additionally, to promote export and liberalise foreign investments FDI in Defence Sector has been enhanced up to 74% through the Automatic Route and 100% by Government Route.

The government has also announced 2 dedicated Defence Industrial Corridors in the States of Tamil Nadu and Uttar Pradesh to act as clusters of defence manufacturing that leverage existing infrastructure, and human capital. Further, to enable innovation within Defence & Aerospace eco-system there are supportive government schemes such as

iDEX ((Innovations for Defence Excellence) and DTIS (Defence Testing Infrastructure Scheme).

Further, 3.3% Share of GDP has been spent on defence (2023-24) and \$160 Bn Defence exports have reached an all-time high in FY 2022-23. \$1.068 Tr is the Current value of Defence production in FY 2022-23.

DRDO's Technology Development Fund (TDF) for MSMEs & Startups is designed to indigenize cutting-edge defence technologies. Presently, 164 Technologies are being indigenized, for which \$30.8 Mn funds have been sanctioned, and 1886 experts and 5270 companies are engaged.

Under the Atmanirbhar Bharat Initiative, Four Positive Indigenisation List (PIL) have been promulgated and items of first three PIL have been indigenised by Defence Public Sector Undertakings (DPSUs) well before their original timelines.

SRIJAN portal under Department of Defence Production, MoD, was launched to promote indigenization. DPSUs/SHQs are required to display their imported/likely to be imported items on this portal. Also, items which have been envisaged for indigenization are also to be displayed for Indian Industry to show their interest to design, develop and manufacture either themselves or through Joint Venture with the OEMs. As on date, status of 4666 (total from four PIL) defence items is available on the portal.

### 1.3 **Innovation for Defence Excellence (iDEX)**

iDEX scheme was launched in the year 2018 with the aim of self reliance and fostering innovation and technology development in defence and Aerospace industries. The iDex scheme is funded and managed by Defence Innovation Organisation(DIO). DIO is to interact and Communicate with innovators/startups through the Defence Innovation Hubs regarding defence and aerospace needs. DIO is also to evaluate technologies and products coming from innovators/startups in terms of their utility and impact on the Indian defence and aerospace setup.

### 1.4 **iDEX Working Model.**

The working model of iDEX involves ‘Partner Incubators’ (PIs) which form a important link towards achieving goals of innovation in Defence sector. The government have issued guidelines for PIs. The objectives of collaboration between the ‘Partner Incubator’ and iDEX-DIO is to explore and discover innovators/startups/MSMEs which can co-create innovative defence technologies with the Indian armed forces and other establishments, mentor and nurture such startups/MSMEs and run programs like accelerators to support the identified Startups/MSMEs by iDEX-DIO. The Partner Incubators are also to promote defence innovations at the schools and in academic institutes. In this process, the identified Startups/MSMEs will be supported with prototyping and piloting defence related products/technologies. And help in building the ecosystem for startups to interact with the Indian Defence establishment.

### **1.5 Defence Innovation Fund**

The establishment of the Defence Innovation Fund (DIF) and iDEX aims to cultivate an ecosystem fostering innovation and technology development in the Defence and Aerospace sectors. This involves engaging industries, including MSMEs, startups, individual innovators, R&D institutes, and academia, providing them with grants and funding, and offering support for R&D activities with potential applications in Indian defence and aerospace requirements. The primary objectives of the Defence Innovation Fund include facilitating the rapid development of indigenized and innovative technologies, promoting engagement with innovative startups, and fostering a culture of technology co-creation and co-innovation within the defence and aerospace sectors.

### **1.6 Co- Innovation and Co-Creation**

To achieve these objectives, iDEX, as the executive arm of DIO, performs crucial functions such as co-innovation and co-creation, piloting candidate technologies, and indigenizing defence and aerospace platforms. The iDEX team engages in setting up and managing the iDEX network, communicating with innovators through Defence Innovation Hubs, organizing challenges and hackathons, evaluating technologies, enabling and funding pilots, interfacing with military leadership, and facilitating the scale-up, indigenization, and integration of successfully piloted technologies into manufacturing facilities. The overarching goal is to establish a culture where collaboration between innovators and the Indian military becomes commonplace and

frequent, enhancing the adoption of innovative technologies into the defence establishment.

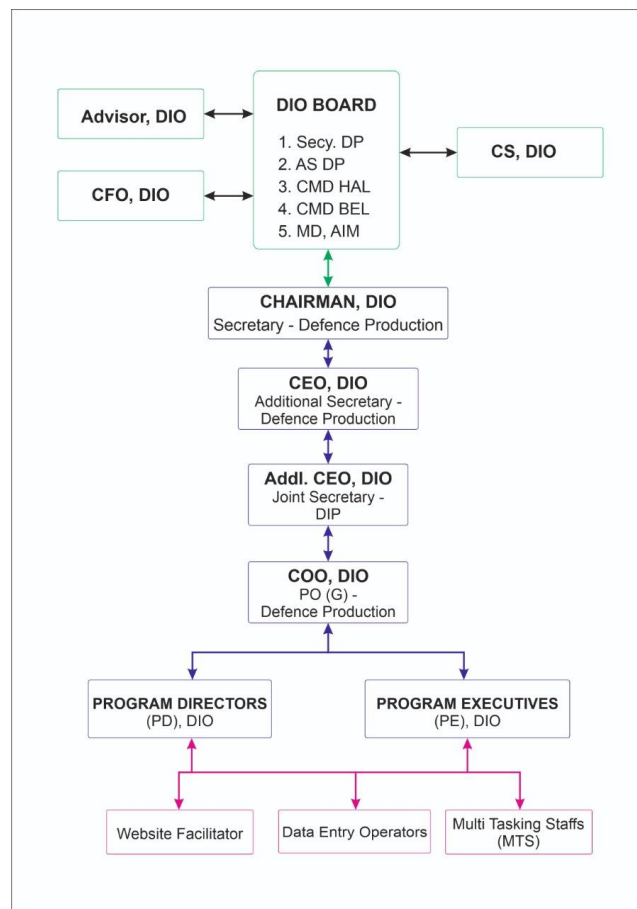
### 1.7 **Business Model**

The engagement strategy aims to establish a "corporate VC" model for Indian defence through iDEX. It empowers iDEX to organize challenges, hackathons, and accelerators, facilitating co-creation with innovators. Defence Innovation Hubs will play a pivotal role, providing innovators with information and feedback directly from military services, encouraging solutions for major defence platforms. This approach attracts more innovators to the defence sector while enabling the military to embrace a "Fail Fast and Recover Faster" concept, incorporating agile and fast-moving entities into the defence domain. Kalyanasundaram *et al.*, (2021), in their paper highlight the need to draft policies that protects the sustenance of start-ups during their stability and growth stages. By doing this it will mitigate late-stage start-up failures, and hence reduce the higher costs to the start up as well as the effect of non availability of the product planned. Therefore the policy should cater for building up the immunity of start-ups, introduce mechanism to reduce the failure rate. The policy should include a mechanism to measure the failure rate of start ups. Similarly, policy makers should promote the enhancement of Intellectual Capital component in the organizations being run by business start ups (Peña, I. 2002).

### 1.8 **Defence Innovation Organisation(DIO)**

iDEX, funded and managed by the not-for-profit company Defence Innovation Organisation (DIO), will implement the Defence Innovation Fund. DIO provides high-

level policy guidance, and iDEX, with functional autonomy, is led by a CEO possessing technical expertise and experience in innovation. The iDEX team comprises tech experts, tech deployment specialists, and innovation stakeholders. While iDEX spearheads the creation of the innovation ecosystem, individual Defence Innovation Hubs operate as financially viable units with DIO's support, fostering a network of defence tech and innovation stakeholders across the country.



**Figure 1. Organisation Structure of DIO**

(Source iDEX website)



### 1.9 **Partner Incubators**

Partner Incubators are required to assist iDEX in setting milestones and objective of the project of the selected startups/MSMEs as per iDEX-DIO guidelines which need to be updated time to time. Partner Incubators provides the required feedback to iDEX for clearing the technical milestone of the startups/MSMEs. As on date, the number of partners Incubators identified by DIO pan India are 28.

## Chapter -2: Literature Review

### 2.1 Invest India

(<https://www.investindia.gov.in/>). India offers the ideal blend of innovation, talent, financial, and renewable resources to help business in India, thrive. The most awarded investment promotion agency in the world, Invest India is the advisor, guide, and facilitator to every investor looking to make a home in India. It offers a one-stop solution to global and domestic investors and handhold them throughout their journey into the world's most liberal investment destination from the day they start exploring India as an investment destination to the time of deployment of their investments and even beyond.

In addition to offering tailor-made incentive offers, it collates the information needed to optimise decision-making, mediate between the government and their businesses, and support their future expansion plans.

Invest India's work spans the entire spectrum of India's transformational business sector, from supporting India's rapidly expanding start-up ecosystem to harnessing the power of innovation from India's laboratories and bringing it to market, or identifying, developing, and deploying technologies on the ground.

Its multi-faceted activities include detailed India entry strategies and research, end-to-end handholding, and investment aftercare. It works with every major country around the

world, and across all Indian states. The team, comprised of over 400 of the finest, most talented business professionals handpicked from India's and indeed the world's best universities and companies serve as investors' pro bono guide to developing the best India strategy. From assisting with land acquisition to highlighting infrastructure projects for investment, showcasing cutting-edge innovation and startups, and world-class research, the various teams at Invest India offer each new investor the panoramic scope of the India opportunity and ways to navigate it.

Invest India was awarded the Investment Promotion Award, 2020 by the United Nations Conference on Trade and Development for good practices during the pandemic. Most recently, they were honored as the world's most innovative Investment Promotion Agency 2021 by OCO Global and secured bronze in the first annual Strengthening IPA Advocacy Services Competition launched jointly by the World Bank & WAIPA. Invest India has also been elected as the President of the Geneva-based World Association of Investment Promotion Agencies (WAIPA) for 2021-23.

## 2.2 **Make In India**

(<http://www.makeinindia.com/home>). The "Make in India" initiative was launched by the Government of India in September 2014 to promote manufacturing and innovation in the country and encourage Foreign Direct Investment. The initiative aimed to transform India into a global manufacturing hub by fostering innovation, building world-class infrastructure, and creating a conducive environment for businesses. "Make in India" website, the official website for the initiative is typically the primary online platform

where information, updates, and resources related to the initiative are provided. iDEX is an initiative emerging from Make in India concept, however it mainly deals with only Defence sector. The goals of iDEX emerge from the goals of Make in India and therefore the study of Make in India policy is essential before analyzing iDEX scheme.

(a) The objectives of the Make in India scheme are as follows:

Promoting Manufacturing. The primary goal is to boost the manufacturing sector's contribution to India's GDP.

**Fostering Innovation. Encouraging innovation and R&D activities to enhance competitiveness.**

Job Creation. Generating employment opportunities, especially in the manufacturing sector.

Ease of Doing Business. Simplifying regulatory processes and promoting a business-friendly environment.

(b) Key Sectors. Make in India focuses on 25 key sectors, including automobile, textiles, chemicals, IT and BPM (Business Process Management), pharmaceuticals, construction, aviation, **defence manufacturing**, and more.

(c) Investment Promotion. The initiative aims to attract both domestic and foreign investment by showcasing India as a lucrative investment destination. Special emphasis is placed on improving the ease of doing business, reducing bureaucratic hurdles, and providing a more conducive environment for businesses.

(d) Infrastructure Development. Infrastructure development is a crucial component, and the government has focused on improving logistics, transportation, and industrial infrastructure.

(e) Skill Development. Make in India places importance on skill development initiatives to create a workforce that is better equipped for the demands of modern manufacturing.

(f) Digital India Integration. The initiative integrates with the broader Digital India campaign to leverage technology for efficiency and transparency in manufacturing processes.

(g) Government Support. Various policy measures and reforms have been introduced to support the initiative, including changes in FDI (Foreign Direct Investment) policies, labor reforms, and other regulatory improvements.

(h) Campaign Promotion. The government has actively promoted the Make in India campaign globally, showcasing India's potential as a manufacturing hub.

### 2.3 **Startup India**

<https://startupindia.gov.in>. Startup India is an initiative by the Government of India that was launched in January 2016. The primary aim of this initiative is to foster

entrepreneurship and promote the growth of startups in the country. The initiative focuses on creating an ecosystem that is conducive to the development of innovative business ideas and the establishment of successful startups. iDEX scheme also promotes participation of MSMEs and start-ups in innovation but only in Defence sector. Study of vision, objective and initiative of Startup India is therefore essential to understand the limitation or need of start ups towards participation in iDEX schemes. Under the Startup India initiative, eligible companies can obtain recognition as Startups by the Department for Promotion of Industry and Internal Trade (DPIIT). This recognition grants them access to a range of benefits aimed at fostering innovation and entrepreneurship. Some of the key advantages of obtaining Startup India recognition include:

**Tax Benefits:** Recognized startups are eligible for various tax incentives and exemptions, including a three-year exemption from income tax in a consecutive block of seven years, provided they meet certain conditions.

**Easier Compliance:** Startups enjoy relaxed regulatory compliance requirements, such as self-certification across various labor and environmental laws. This simplifies the process of setting up and operating a business, reducing the administrative burden on entrepreneurs.

**Intellectual Property Rights (IPR) Fast-Tracking:** Startups can avail expedited examination of their patent applications, helping them secure intellectual property rights

more swiftly. This enables startups to protect their innovative ideas and technologies effectively.

**Funding Support.** Startup India facilitates access to various funding schemes and initiatives, including credit guarantee schemes and funds of funds, to support the growth and expansion of startups. Additionally, startups are encouraged to raise funds through alternative investment sources such as angel investors and venture capital funds.

**Networking and Collaboration Opportunities.** Recognized startups gain access to a vibrant ecosystem of mentors, industry experts, and fellow entrepreneurs through Startup India's network. This facilitates networking, collaboration, and knowledge sharing, enabling startups to learn from peers and access valuable resources.

**Market Access and Government Procurement.** Startup India provides opportunities for startups to access markets through government procurement programs and initiatives. This includes special provisions for startups in public procurement policies, enhancing their visibility and market reach.

**Registration and Recognition.** Entrepreneurs and startups can usually register on the website to avail benefits and incentives offered by the government. The website outlines the process for obtaining recognition as a startup. The website offers resources such as guides, toolkits, and educational materials to assist startups in various stages of their development.

## 2.4 Atal Innovation Mission

<http://aim.gov.in>. The “Atal Innovation Mission” (AIM) is an initiative by the Government of India to promote innovation and entrepreneurship across the country. Launched in 2016, the mission is named after the former Prime Minister of India, Atal Bihari Vajpayee, and it operates under the aegis of the NITI Aayog, which is the government's policy think tank. The government policy on promotion of innovation through AIM forms the basis of iDEX in providing incentives to MSMEs and start-ups towards innovation.

**Objectives of AIM:** To foster a culture of innovation and entrepreneurship among students, educators, and entrepreneurs. To support and encourage the creation of innovative solutions to societal problems and create a network of innovation hubs and tinkering labs across the country.

**Tinkering Labs:** One of the key components of AIM is the establishment of Atal Tinkering Labs (ATLs) in schools. These labs are equipped with tools and technologies to enable students to explore and experiment with STEM (Science, Technology, Engineering, and Mathematics) concepts. The goal is to foster creativity, problem-solving skills, and an entrepreneurial mindset among students.

**Atal Incubation Centers (AICs):** AIM supports the creation of Atal Incubation Centers, which provide a nurturing environment for startups and



entrepreneurs. These incubation centers offer mentorship, infrastructure, and funding support to early-stage startups.

**Atal New India Challenges (ANIC):** ANIC is an initiative under AIM that invites innovators and entrepreneurs to address specific challenges faced by various industries.

It aims to bridge the gap between innovators and potential users, fostering the development and adoption of innovative solutions.

**Atal Community Innovation Centers (ACICs):** These centers are aimed at promoting innovation at the community level and are established in partnership with various stakeholders.

**AIM Website:** The Atal Innovation Mission has a dedicated website that provides information about its various programs, resources, and updates. The website serves as a platform for schools, students, educators, and entrepreneurs to engage with AIM initiatives.

**ARISE-** Applied Research and Innovation in Small Enterprises for MSMEs and start ups. AIM has started the concept of awarding projects to MSMEs and startups by raising challenges in the ARISE-ANIC programme. The aim of ARISE is to incentivize innovations in areas critical to India's development and growth-Health, Water and sanitation, Food Processing, Housing, Defence, Space Application etc.

The winner of the challenge is provided with the grant of upto 50 Lakhs to promote applied research and Innovation.

The Organization for Economic Cooperation and Development (OECD 2010) defines innovation as “ the implementation of a new or significantly improved product, service, process, a new marketing method, or a new organizational method in business practices, workplace organization, or external relations”.

The National Science & Technology Entrepreneurship Development Board (NSTEDB) was established in 1982 by the Government of India under the Department of Science & Technology (DST). Its primary objective is to foster the growth of knowledge-driven and technology-intensive enterprises in the country. NSTEDB serves as an institutional mechanism to promote entrepreneurship by leveraging science and technology. The board comprises representatives from various socio-economic and scientific ministries/departments, ensuring a multi-disciplinary approach to entrepreneurship development. One of the key goals of NSTEDB is to facilitate the transformation of individuals from being job-seekers to job-generators through science and technology interventions. It achieves this by providing support and initiatives aimed at nurturing entrepreneurial talent, fostering innovation, and creating a conducive ecosystem for startups and small enterprises.

National Initiative for Developing and Harnessing Innovations (NIDHI) is an umbrella program conceived and developed by the DST-NSTEDB, for nurturing ideas and

innovations (knowledge-based and technology-driven) into successful startups. The key components of NIDHI are:-

NIDHI-GCC - Grand Challenges and Competitions for scouting innovations

NIDHI-PRomotion and Acceleration of Young and Aspiring technology entrepreneurs

(NIDHI-PRAYAS) - Support from Idea to Prototype

NIDHI - Entrepreneur in Residence (NIDHI-EIR) - Support system to reduce risk

NIDHI-Technology Business Incubator (TBI) - Converting Innovations to start-ups

NIDHI-Accelerator - Fast tracking a start-up through focused intervention

NIDHI-Seed Support System (NIDHI-SSS)- Providing early stage investment

NIDHI Centres of Excellence (NIDHI-CoE) - A World class facility to help startups go global

Another similar model by Department of BioTechnology (DBT) is the Biotechnology Industry Research Assistance Council (BIRAC). It plays a crucial role in fostering innovation and strengthening the biotechnology sector in India. Its primary objective is to empower emerging biotech enterprises to undertake strategic research and innovation, focusing on addressing nationally relevant product development needs.

BIRAC serves as an interface agency between industry and academia, facilitating collaboration and knowledge exchange to drive innovation in biotechnology. It implements a wide range of impact initiatives aimed at supporting biotech firms and making them globally competitive. Some of the key initiatives undertaken by BIRAC include:-

1. BIRAC offers targeted funding to biotech startups and enterprises to support research and development activities. This funding helps mitigate the risks associated with innovation and enables firms to pursue novel ideas and technologies.

2. BIRAC facilitates the transfer of technology from academia to industry, bridging the gap between research institutions and commercialization. This promotes the translation of research findings into tangible products and services with real-world applications.

3. BIRAC assists biotech firms in managing their intellectual property (IP) assets effectively, including patents, copyrights, and trademarks. This ensures that innovative ideas are protected and monetized, contributing to the growth of the biotechnology industry.

4. BIRAC offers handholding support to biotech startups and entrepreneurs, providing guidance and mentorship throughout the innovation process. This includes assistance in business planning, market access, regulatory compliance, and other aspects of enterprise development.

Over its eight years of existence, BIRAC has initiated numerous schemes, networks, and platforms to bridge gaps in industry-academia collaboration and

facilitate the development of high-quality, affordable products through cutting-edge technologies. Moreover, BIRAC has forged partnerships with national and global organizations to leverage expertise, resources, and networks in fulfilling its mandate.

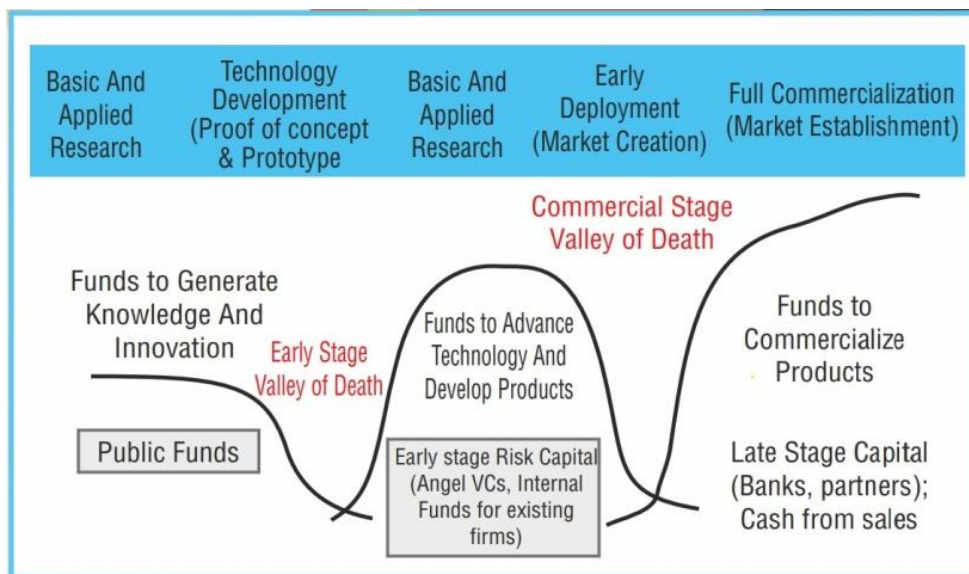
Laxman Kumar Behera, IDSA , occasional paper no. 32, Defence innovation in India: The fault lines. The author gives an insight of R&D activities in the independent India and relation of R&D organisations with Industry, both PSUs and Private. The comparison of R&D organisations show not so good performance of DRDO. The author calls for need of thrust, better investment in R&D, higher organisational structure, and reforms.

Deba R. Mohanty, IGCC defense Innovation briefs, Jan 2014, A dismal show amid pockets of excellence: The state of defense innovation in India. The paper highlights poor performance of DRDO and dismal progress in the field of defence innovation in India. Huge gap exists in nation targets and what is future plan of DRDO. There is a need by DRDO to research on cutting edge technologies such as nanotechnology based sensors, miniature synthetic aperture radar and inverse synthetic aperture radar. Some of the reasons for DRDOs failure is due self created weaknesses such as political apathy, narrow outlook of scientists elites and bureaucratic attitude.

**Co-Creation experiences**, the next practice in value creation by C K Prahalad and Venkat Ramaswamy(2004). This paper highlights the need for shift from a company centric market to customer centric market. A term of Co-creation is defined in the paper

which involves deep interactions to innovate and achieve competitive advantage and value addition by way of co-creation. The building blocks of interactions for co-creation of value are Dialogue, Access, Risk-benefits and Transparency(DART). iDEX scheme is based on Co-creation, involving the initial requirement projected by the customer,i.e the Service Headquarters and thereafter the prototype testing and improvement in the designs are the results of regular interaction with the customer and the firm.

Cherian.,(2020), Helping start-ups cross the ‘Valley of Death’: The Main Challenge for iDEX. The Indian iDEX is based on the scheme originally initiated by US and Israel. The obstacles expected during contracting phase has been termed as Valley of Death, which could be mitigated by transitioning from Challenges to ‘Pitch Days’ wherein contract are signed on the spot soon after the proposal is pitched. Other suggestion is partnering with foreign firms to circumvent the deficiency in supply-Chain as all components may not be available within one country.



**Figure 2. Valley of Death**

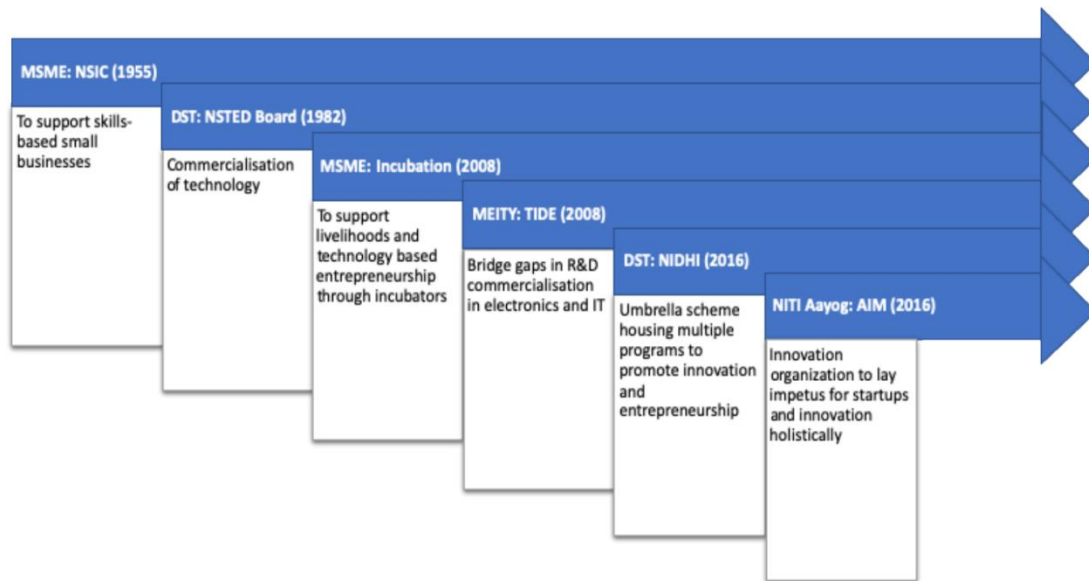
Barbero *et al.*, (2014), in their paper lays the importance of having the understanding of different types of innovation Vs types of incubators. There are three types of innovation, namely, Product innovation, Technological process innovation, and Organisational innovation. Incubators are of four types namely, Basic Research incubator, University incubator, Private incubator and Economic/Regional development incubator. As per the study basic research incubators give higher output in terms of product and technological innovations. Also, they along with private incubators generate higher quantity of all types of innovation.

Mubaraki *et al.*, (2017), in their study identify the challenges and opportunities of innovation and incubators programs The challenge related to incubator as per the study was that “the incubator models indicated as high technology incubator types contributed positively to the extension of technology sectors in each country with new product and new services;” and opportunity related with incubators was that “incubators play an active role in nurturing businesses, creating jobs, and increasing survival rates during the early stages of the start-up companies”.

Sakwar., (2023), in his paper lists down the various Defence India Startup Challenges (DISC) and top 10 start up companies which have participated in iDEX scheme and thus contributed to India’s self-reliance.

Sharma *et al.*,(2020), in their study cover government initiatives as Pre-1991 and Post-1991 era. The paper analyses 284 incubators based on their age, sectoral focus,

geographical locations and affiliation to government schemes and bodies. The incubation policies of various ministries such as MSME, DST, Meity and Niti aayog (AIM) is compared. The authors discuss that considering the diversity amongst incubators relevant performance metrics need to be devised.



**Figure 3. An overview of Incubation Support from Central Government Institutions**

(Source: Sharma et al(2020))

Cheung., (2021) in his paper provides a conceptual framework to examine state of defence innovation capabilities in countries like Israel, Singapore, North Korea, Russia, China, India and US by categorizing countries as per their size, economy and global power status. As per the study, US is the leader in defence innovation whereas India's position has been assessed on the basis of the paper written by Behera on the fault lines in Defence innovation in the country.



Kalyanasundaram *et al.*, (2021), there is a need to formulate policies that guard the sustenance of start-ups during stability and growth stages of start-up lifecycles. This will prevent late-stage start-up failures, thereby reducing the higher socio-economic costs associated with it. Policymakers should lay emphasis on the lines as follows: (1) building start-ups' immunity, (2) reducing start-ups' failure rate and (3) helping start-ups to elevate themselves to higher stages. The current mechanism focuses only on the number of start-ups getting started. Policymakers should establish means to measure startups' performance across the start-up life cycle and the number of start-ups getting eliminated from the ecosystem.

## 2.5 Objectives

The research objectives of the study are :

- (a) To Study model of iDEX and role of Partner Incubators.
- (b) To Assess the impact of performance of Partner Incubators.
- (c) To suggest recommendations, if any, to improve the ecosystem.

## 2.6 Research Question

Following research questions are formulated to attain the objectives of the study:

- Q1. How has been the progress of iDEX scheme since its launch in 2018?
- Q2. How important is the role of Partner incubators in success of iDEX scheme?
- Q3. Are the Govt. policies adequate to motivate partner incubators to function?

Q4. Have incubators met the aims and objectives prescribed to them?

Q5. What are the recommendations for partner incubators to make iDEX scheme more efficient?

## 2.7 **Scope/Limitations**

The study is limited in scope due to paucity of time and time bound nature of submission of dissertation.

## 2.8 **Research Method and Data Sources**

A thoughtful combination of quantitative and qualitative research methodologies have been used in the approach of this study. A questionnaire seeking general information was sought from selected Partner Incubators. Thereafter, structured interview were held with these PIs. A survey poll was done with Start-ups and MSMEs by a questionnaire. For the study, the primary source of data has been collected from Partner Incubators located at various part of the country through a questionnaire. Visits to selected Partner Incubators has been made to obtain establish better understanding of the working of innovation hubs. Discussions with Service HQs and HQ Integrated Defence Staff were undertaken to understand the working of each department and their interdependency between each other. Discussions with and limited start ups and MSMEs was also undertaken in various forums such as Svavlamban and DefConnect 2024. The secondary source of data has been obtained through records at Service HQs, or available through documents released by DIO/Ministry of Defence.

## 2.9 Defence India Start Up Challenge(DISC)

### 2.9.1 DISC I to XI

Over last six years a total of Eleven DISCs in standard format have been launched. In addition to this, other Challenges have also been formulated during this period and launched along with DISC launch. The launch programme is conducted with large participation from start ups, MSMEs, PIs, Staff of IDEX-DIO, service officers from all the three services. The even is attended by Defence Minister and Defence secretary and is conducted in New Delhi. Based on the successful completion of the challenge and proving of SSCT, service HQ may place order to the firm for procurement. Some of the successful projects which have turned into procurement orders is given in the table below. Till date, items worth Rs 564 Cr has been ordered on various iDEX firms.

**Table 1-List of iDEX Companies Awarded Procurement Orders**

S.No.	Item/Product	iDEX Winners	Service	Cost in Cr.
1	Battery powered self propelled lifebuoy	Saif Seas	Navy	11.4
2	AI in SCM & Logistics	Radome	Navy	2.15
3	Fire Fighting Robot	Swadeshi	Navy	181.9
4	Morpene	Adisan	Navy	24.49
5	4G/LTE Tactical LAN	Lekha	Navy	4.06

<b>S.No.</b>	<b>Item/Product</b>	<b>iDEX Winners</b>	<b>Service</b>	<b>Cost in Cr.</b>
		Wireless		
6	Dronaam series Anti drone system	Gurutava	Air Force	8.89
7	Remotely Piloted Airborne Vehicles	Zmotion	Air Force+Army	5
8	Integrated Mobile Camouflage System (IMCS)	Hyperstealth	Army	6.8
9	4G/LTE Tactical LAN	Astromer	Army	6
10	AI Based Satellite Image Analysis	CYRAN	Army	50
11	Countermeasures for illegal drones	Gurutava	Air Force+Army	50
12	Countermeasures for illegal drones	BBBS	Air Force+Army	208
13	Remotely Piloted Airborne Vehicles	DV2JS	Air Force	1.2
14	Motion Pattern Classification on Online/Active dat	Blurgs	DPSU	2.1
15	Reduction of RCS of Naval Warships	Zeus Numerix	DPSU	2.1
16	Development of Artificial Intelligence based Training modules for Technicians for	Parallax Labs LLP	DPSU	0.19

<b>S.No.</b>	<b>Item/Product</b>	<b>iDEX Winners</b>	<b>Service</b>	<b>Cost in Cr.</b>
	operation and maintenance of Su-30MK1 aircraft			
	<b>Total</b>			<b>564.28</b>

(Source: iDEX-DIO)

### **2.9.2 Open Challenge**

The Start Ups and MSMEs are also allowed to suggest their product/ technology which can be utilized in Defence forces. The proposals are fielded by Start-Ups and MSMEs and scrutinized by the Nodal agencies for its suitability and applicability. If found suitable, the challenge is awarded to the same Start Up/MSME. The challenge is open for one year duration.

### **2.9.3 iDEX PRIME**

iDEX PRIME consists of bigger projects with higher likely costs. The scheme has an increased grant amount of Rs 10 cr, iDEX PRIME (X) was launched with Thirteen problem statements from the Armed Forces for resolution by startups & innovators.

### **2.9.4 INDUS-X**

India-United States Defence Acceleration Ecosystem (INDUS X) was launched on 21 June 2023 in Washington. The INDUS X event was co-organised by iDEX

and US Department of Defence (DoD) and hosted by US-India Business Council (USIBC). INDUS-X Mutual Promotion of Advanced Collaborative Technologies (IMPACT) Challenges are problem statements being launched jointly by Indian Ministry of Defence's Innovations for Defence Excellence and the U.S. Department of Defense's Defense Innovation Unit for promoting co-development among the startups of the two nations under the umbrella of INDUS-X.

### **2.9.5 ADITI**

The latest scheme by iDEX was launched on 04 Mar 24 by RM during DefConnect. This special scheme is to support the development and acceleration of innovation in critical and strategic deep-tech technologies.

As per the iDEX latest policy, in ADITI scheme, Quantum of Grant up to 50% of Product Development Budget (PDB) with maximum limit of Rs. 25 Crore, leading to a PDB around Rs. 50 Crore or beyond. Around 30 critical and advanced technologies which are critically required for national security and where the country does not have existing capabilities have been provisioned to be developed under ADITI. Such technologies shall have core Defence applications and may also have export potential.

Eligibility Criteria for ADITI:-

Startups, as defined and recognized by the Department for Promotion of Industry and Internal Trade (DPIIT), Ministry of Commerce and Industry, Government of

India. Any Indian company incorporated under the Companies Act 1956/2013, primarily a Micro, Small and Medium Enterprises (MSME) as defined in the MSME Act, 2006. Individual innovators are also encouraged to apply (research & academic institutions can use this category to apply). However, post-selection individual innovators need to register as Startup/MSME.

## 2.10 **PRODUCT DEVELOPMENT BUDGET**

The partner Incubators have a large role to play in the educating the start up/MSMEs about the funding scheme and educating them for financial prudence and correct utilization of the funds.

The **Product Development Budget (PDB)** is an estimate of the resources required for bringing a product to deployment stage, covering capital and operating expenditures, in accordance to the guidelines issued by DIO. The PDB is the overall project cost including the SPARK Grant and Matching Contribution (Cash, In-Kind and Past Expenditure). The PDB is divided in three broad heads – Prime Costs, Primary Overheads and Secondary Overheads.

PDB at the time of signing of agreement is tentative which may undergo multiple changes during the course of Product Development. In all cases, SPARK Grant will remain 1.5 CR or half (50%) the product development budget whichever is lower.

In a PDB, minimum 75% of SPARK Grant should be allocated to the Prime Costs and maximum 25 % of SPARK grant may be allocated to Primary Overheads. No fund is allocated to Secondary Overheads from SPARK Grant.

### 2.11 **Partner Incubators**

Incubators are organizations that provide support to startups and small businesses, typically in their early stages of development. They offer a range of resources, services, and mentorship to help these ventures grow and succeed. Incubators can be affiliated with universities, corporations, government agencies, or independent entities, and they often operate within specific industries or sectors.

The role of incubators in mentoring startups and MSMEs is multifaceted:

1. **Guidance and Mentorship:** Incubators provide entrepreneurs with access to experienced mentors who offer guidance on various aspects of business development. This includes advice on refining business models, product development, market analysis, and strategic planning. Mentors may also assist in networking and making valuable connections within the industry.
2. **Access to Resources:** Incubators offer startups access to resources they may not have on their own. This can include office space, equipment, infrastructure, and administrative support. By providing these resources at subsidized rates or as



part of their program, incubators help startups reduce overhead costs and focus their resources on core business activities.

3. **Networking Opportunities:** Incubators facilitate networking events, workshops, and seminars where startups can connect with industry experts, investors, potential partners, and other entrepreneurs. These networking opportunities help startups expand their professional network, gain valuable insights, and access potential funding sources.

4. **Technical Assistance:** Many startups require specialized technical expertise to develop and refine their products or services. Incubators often have access to technical experts or consultants who can provide assistance in areas such as product design, prototyping, software development, and quality assurance. This technical support can help startups overcome technical challenges and accelerate their development process.

5. **Business Support Services:** Incubators offer a range of business support services aimed at helping startups build a solid foundation for growth. This may include assistance with business planning, financial management, legal compliance, intellectual property protection, and marketing strategy. By providing tailored support in these areas, incubators help startups navigate the complexities of running a business and increase their chances of success.

Incubators play a crucial role in nurturing and supporting the growth of startups and MSMEs by providing mentorship, access to resources, networking opportunities, technical assistance, and business support services. Through their comprehensive support programs, incubators help entrepreneurs overcome challenges, mitigate risks, and realize their full potential.

Details about the 28 Partner Incubators onboarded by iDEX-DIO till date is given in succeeding paragraphs.

### **2.11.1 Maker Village, Kochi**

Maker Village is a groundbreaking initiative spearheaded by the Ministry of Electronics and Information Technology, Government of India, in collaboration with the Indian Institute of Information Technology, Trivandrum, and supported by Kerala Startup Mission. As the largest electronic hardware incubator and ESDM (Electronics System Design and Manufacturing) facility in the country, Maker Village is at the forefront of promoting innovation in hardware-focused startups. By establishing state-of-the-art labs and dedicated centers, Maker Village is committed to fostering innovation in emerging disruptive technologies, thereby positioning India as a global leader in these domains. Through its comprehensive support ecosystem, Maker Village empowers entrepreneurs to translate their innovative ideas into market-ready products, driving growth and competitiveness in the electronics and hardware sectors. With a focus on nurturing talent, fostering collaboration, and facilitating access to resources, Maker Village plays a pivotal

role in catalyzing the development of India's electronics and hardware industry, paving the way for technological advancement and economic prosperity.

### **2.11.2 Indian Institute of Science, Bangalore**

The Indian Institute of Science (IISc) stands as a prestigious public institute, recognized for its contributions to research and higher education in science and engineering. Situated in Bangalore, Karnataka, IISc is dedicated to achieving global prominence through its relentless pursuit of excellence in research and innovation. At its core, IISc is committed to providing world-class education that equips future leaders in science and technology with the skills and knowledge necessary to drive progress and innovation. Moreover, IISc places a strong emphasis on leveraging scientific and technological breakthroughs to foster India's economic growth and societal well-being. By nurturing a culture of innovation and excellence, IISc strives to serve as a catalyst for India's development, contributing to wealth creation and social welfare through the application of cutting-edge research and technology. Through its multifaceted endeavors in education, research, and innovation, IISc continues to uphold its mission of advancing knowledge and serving as a beacon of excellence in the global academic landscape.

### **2.11.3 Indian Institute of Technology, Hyderabad**

The Indian Institute of Technology Hyderabad (IIT Hyderabad or IITH) stands as a distinguished public institution renowned for its excellence in engineering

education and research. Situated in the Sangareddy district of Telangana, India, IITH occupies a strategic location near prominent IT and industrial hubs, facilitating synergistic collaboration and knowledge exchange. Central to the ethos of IIT Hyderabad is its strong emphasis on research and innovation, which forms the bedrock of its academic pursuits. This commitment to fostering a vibrant research culture is reflected in the institution's impressive track record of patents and publications, indicative of its significant contributions to cutting-edge research across various disciplines. With a focus on pushing the boundaries of knowledge and addressing real-world challenges, IIT Hyderabad serves as a dynamic hub for interdisciplinary research and scholarly pursuits. By nurturing a culture of curiosity, creativity, and collaboration, IIT Hyderabad continues to uphold its reputation as a premier institution for academic excellence and innovation in India and beyond.

#### **2.11.4 SINE, IIT Mumbai**

The Society for Innovation and Entrepreneurship (SINE), founded in 2004 at the esteemed Indian Institute of Technology Bombay (IIT Bombay), holds the distinction of being one of the pioneering incubators within academia. With a rich history of fostering innovation and entrepreneurship, SINE has consistently demonstrated its ability to catalyze economic growth, generate strategic value, and address societal challenges. Through its robust support ecosystem, SINE has empowered over 140 startups and 380 innovators, resulting in the creation of more than 3600 jobs. This impressive track record underscores SINE's pivotal role

in nurturing and scaling innovative ventures that drive both economic and social impact.

SINE's proactive engagement in numerous collaborative initiatives with government agencies, academic institutions, industry partners, and other stakeholders exemplifies its commitment to fostering a vibrant entrepreneurial ecosystem. By leveraging its expertise, networks, and resources, SINE continues to spearhead initiatives aimed at promoting innovation, technology commercialization, and startup ecosystem development. Furthermore, SINE serves as a beacon of inspiration and best practices for aspiring incubators, setting high standards of excellence and serving as a role model within the incubation community. As SINE continues to evolve and expand its footprint, it remains steadfast in its mission to catalyze innovation-driven entrepreneurship and contribute to India's growth and development journey.

#### **2.11.5 CIIE, IIM Ahmedabad(Now changed to IIMA Ventures)**

The Centre for Innovation Incubation and Entrepreneurship (CIIE) at IIM Ahmedabad is a dynamic hub that empowers entrepreneurs to transform their ideas into thriving businesses. Through strategic partnerships with mentors, corporates, development agencies, the IIMA community, and investors, CIIE fosters a unique breed of entrepreneurs by providing comprehensive support in incubation, acceleration, mentorship, and funding for innovative startups. With its extensive experience and deep understanding of market gaps and opportunities,

CIIE has played a multifaceted role in India's entrepreneurial landscape, leveraging its expertise to incubate, accelerate, and invest in promising startups across various sectors. As the Partner Incubator of the iDEX program since 2018, CIIE has been instrumental in supporting and mentoring over seven startups, further solidifying its commitment to driving innovation and entrepreneurship in the country.

At the pre-seed stage, IIMA Ventures recognizes the challenges faced by entrepreneurs in building their first prototype or Minimum Viable Product (MVP), especially in frontier technology areas like Aerospace, Biotech, Cleantech, and Life Sciences. By collaborating closely with government agencies, foundations, and corporates, IIMA Ventures channels catalytic capital in the form of grants and equity to support aspiring entrepreneurs developing disruptive solutions in these domains. Through initiatives focused on Deep-Tech, Digitization, Digital Inclusion, and Sustainability, IIMA Ventures aims to mitigate risks associated with early-stage deep technology ventures and foster innovation in sectors where risk capital is scarce.

IIMA Ventures endeavors to bridge the "valley of death" faced by startups at the seed stage by providing essential capital and leveraging its extensive networks to syndicate investments from other co-investors. With investments typically ranging between \$100-150k per venture, IIMA Ventures boasts an impressive track record of over 35 profitable exits and portfolio companies raising over \$250M in follow-

on investments. Notable investors such as Sequoia, Accel, Matrix Partners, Qualcomm Ventures, pi Ventures, and Falcon Edge Capital have participated in follow-on rounds, highlighting the quality and potential of IIMA Ventures' portfolio.

IIMA Ventures' investments span from seed to growth stages, focusing on innovation and inclusion. Through the Bharat Innovation Fund, IIMA Ventures invests in deep-tech breakthrough innovations from Seed to Series B stages, ranging initially between INR 3 to 15 crores. Additionally, through the Bharat Inclusion Seed Fund, investments between INR 2 to 6 crores are made in startups leveraging technology to address challenges faced by the Bharat segment, particularly in sectors like financial inclusion, livelihood, education, and health. IIMA Ventures also manages Infuse Ventures, a pioneering cleantech VC fund in India, further demonstrating its commitment to driving positive impact and innovation across diverse sectors.

#### **2.11.6 IITM Incubation Cell, IIT Chennai**

The IITM Incubation Cell (IITMIC) serves as a central hub for fostering innovation and entrepreneurship at IIT Madras, leveraging the institution's diverse strengths and resources. By integrating cutting-edge research, industrial collaborations, India's premier university-driven Research Park, and a track record of successful incubation across rural, social, and industrial technologies, IITMIC creates a fertile ecosystem for startup growth and development. As a not-for-profit

Section 8 Company, IITMIC is recognized as a Technology Business Incubator by Startup India, DIPP, and NSTEDB, DST.

IITMIC's mandate extends to supporting a wide range of stakeholders, including students, faculty, staff, and alumni of IIT Madras, as well as external entrepreneurs and research partners associated with the institution. Through its comprehensive support programs, IITMIC enables the creation of successful deep-tech startups that disrupt industries and translate technological advancements into tangible benefits for society at large. By providing access to mentorship, funding, infrastructure, and industry connections, IITMIC empowers entrepreneurs to navigate the challenges of startup development and scale their ventures effectively. In doing so, IITMIC plays a crucial role in catalyzing innovation-driven entrepreneurship and driving positive socio-economic impact within the ecosystem and beyond.

#### **2.11.7 T-Hub, Hyderabad**

T-Hub represents a pioneering initiative in the realm of innovation and entrepreneurship, serving as a distinctive public-private partnership between the government of Telangana, three of India's premier academic institutes (IIIT-H, ISB & NALSAR), and key private sector leaders. Positioned at the nexus of the startup, academic, corporate, research, and government sectors, T-Hub plays a central role in anchoring and nurturing the entire Hyderabad startup ecosystem.



At its core, T-Hub embodies the convergence of diverse stakeholders, fostering collaboration and synergies to drive innovation and economic growth. Anchored by the state-of-the-art CatalysT building, spanning 70,000 square feet and recognized as the largest building in India dedicated entirely to entrepreneurship, T-Hub provides a vibrant and conducive environment for startups to thrive and flourish.

Through its comprehensive support ecosystem, T-Hub offers a range of resources, including mentorship, funding opportunities, networking events, and access to cutting-edge infrastructure and research facilities. By leveraging the collective expertise and resources of its partners, T-Hub empowers startups to accelerate their growth trajectories, scale their ventures, and make meaningful contributions to the local and global innovation landscape.

By serving as a catalyst for entrepreneurship and fostering cross-sector collaboration, T-Hub plays a pivotal role in positioning Hyderabad as a leading hub for innovation and entrepreneurship on both national and international stages. With its commitment to driving inclusive growth and fostering a culture of innovation, T-Hub continues to be at the forefront of shaping the future of entrepreneurship in India.

### **2.11.8 FORGE, Coimbatore**

FORGE, based in Coimbatore, distinguishes itself by providing comprehensive incubation services aimed at nurturing innovative hardware products and systems into successful enterprises. With a holistic approach, FORGE offers a range of support services, including innovation labs, incubation grants, product and business acceleration, and seed capital investment. The overarching goal is to transform promising innovations into viable businesses with significant growth potential, societal impacts, and profitability.

At the heart of FORGE's mission is the establishment of a world-class Centre of Excellence for Defence & Aerospace Innovations. Through this initiative, FORGE endeavors to bring together advanced technology labs, expert mentoring, and tailored product innovation and business acceleration programs. By providing startups with access to state-of-the-art facilities, specialized expertise, and targeted support services, FORGE aims to facilitate the development and commercialization of cutting-edge solutions in the defence and aerospace sectors.

Through its integrated approach to incubation, FORGE not only supports startups in refining their products and business models but also provides crucial seed capital investment to fuel their growth journey. By leveraging its network of industry partners, investors, and mentors, FORGE enables startups to navigate the complexities of the market landscape and capitalize on emerging opportunities.

Overall, FORGE's commitment to fostering innovation and entrepreneurship in the defence and aerospace domains underscores its vision of driving technological advancement, economic growth, and societal impact. Through its efforts, FORGE aims to position Coimbatore as a hub for hardware innovation and contribute to India's leadership in the global defence and aerospace industries.

#### **2.11.9 FITT, IIT Delhi**

The Foundation for Innovation and Technology Transfer (FITT) operates as an industrial interface organization affiliated with the Indian Institute of Technology Delhi (IIT Delhi). Established as a Registered Society on July 9th, 1992, FITT is committed to facilitating effective collaboration between the institute and the industry to foster, promote, and sustain the commercialization of science and technology for mutual benefit. With over twenty-five years of dedicated service, FITT has been steadfast in its mission to bridge the gap between academia and industry, devising innovative strategies to forge partnerships and linkages that facilitate knowledge transfer for the collective good.

Led by a dedicated team and supported by academicians from IIT Delhi, FITT has played a pivotal role in facilitating successful outreach efforts and fostering extensive collaborations in science and technology. Through its proactive approach and commitment to excellence, FITT has established itself as a trusted partner for industry engagement, facilitating technology transfer, licensing agreements, and collaborative research initiatives. By leveraging the expertise and

resources of both academia and industry, FITT endeavors to drive innovation, economic growth, and societal impact through the commercialization of cutting-edge research and technology solutions.

Over the years, FITT has demonstrated its effectiveness in facilitating meaningful partnerships and collaborations that harness the collective strengths of academia and industry for mutual benefit. By serving as a catalyst for innovation and knowledge exchange, FITT continues to make significant contributions to the advancement of science, technology, and entrepreneurship in India and beyond.

#### **2.11.10 Technology Incubation and Entrepreneurship Development Society (TIEDS)**

TIDES, operating within the framework of IIT Roorkee, serves as a catalyst for fostering innovation and entrepreneurship by providing a conducive environment for the incubation of new enterprises with innovative technologies. At its Incubation Centre, TIDES offers a comprehensive range of support services, encompassing physical infrastructure, technical assistance, financial resources, and networking opportunities.

**Vibrant Innovation & Entrepreneurship Ecosystem:** TIDES cultivates a vibrant innovation and entrepreneurship ecosystem within IIT Roorkee, offering a structured pathway for transforming ideas into prototypes. Through its incubation

program, TIDES provides startups with the guidance and resources necessary to navigate the various stages of development and validation.

**Access to World-Class Laboratories:** Entrepreneurs affiliated with TIDES have access to world-class laboratories and cutting-edge equipment available within the premises of IIT Roorkee. This access enables startups to conduct research, develop prototypes, and validate their technologies with the support of state-of-the-art facilities.

**Support Facilities for Hardware and Software Development:** TIDES facilitates access to specialized facilities such as the IoT Prototyping Facility, Institute Instrumentation Centre, and Institute Computer Centre, offering hardware and software-related support to startups. This infrastructure enables entrepreneurs to leverage advanced technologies and resources to develop and refine their products.

**Connectivity with Faculty and Alumni Network:** Startups associated with TIDES benefit from connectivity with the extensive knowledge base of IIT Roorkee's faculty and the vast network of alumni. This connection provides entrepreneurs with opportunities for mentorship, collaboration, and knowledge exchange, enhancing the quality and impact of their ventures.

Business Incubation Support: TIDES provides comprehensive support for startups transitioning from prototype development to establishing sustainable business ventures. Through mentorship, market validation, access to funding networks, and business development assistance, TIDES enables entrepreneurs to navigate the complexities of commercialization and scale their ventures effectively.

Overall, TIDES plays a pivotal role in nurturing innovation and entrepreneurship within the IIT Roorkee ecosystem, providing startups with the resources, guidance, and networks necessary for success in the competitive landscape of technology-driven ventures.

#### **2.11.11 IIT Guwahati Technology Incubation Centre (IITG-TIC)**

The IITG Technology Incubation Centre (IITG-TIC) operates as a registered society under the Registration of Societies Act XXI of 1860, with a primary objective to foster entrepreneurial initiatives within the IIT Guwahati community, as well as other state or central government technical institutions in the North East region of India. The center serves as a platform for translating innovative ideas into commercially viable products through technology startup companies, thereby promoting interdisciplinary research and innovation in high-growth knowledge-based businesses. Key services provided by IITG-TIC include technical support, business mentoring, and access to soft loan facilities, subject to availability.

Spanning an area of approximately 4000 square meters within the Technology Complex of IIT Guwahati, IITG-TIC is equipped with adequate infrastructure to support entrepreneurial endeavors. The center receives funding for infrastructure development and soft loan facilities from the Department of Information Technology, Government of India. Additionally, it is recognized as a Business Incubator by the Ministry of Micro, Small and Medium Enterprises (MSME), Government of India, and approved for grant assistance by the Technology Development Board under DST.

The facilities at IIT Guwahati, including technical infrastructure and research parks, are accessible to all incubates associated with IITG-TIC. Moreover, the center engages domain experts from various departments as technical mentors to provide guidance and support to startups. Collaborations with enthusiastic students across undergraduate, postgraduate, and doctoral programs are encouraged, fostering a culture of innovation and entrepreneurship across all departments and centers within IIT Guwahati.

In summary, IITG-TIC plays a crucial role in nurturing entrepreneurship and innovation within the IIT Guwahati community and beyond, providing a conducive environment for startups to develop and commercialize their innovative ideas. Through its comprehensive support services, infrastructure, and collaborations, IITG-TIC contributes to the growth and development of the entrepreneurial ecosystem in the North East region of India.

### **2.11.12 SIIC IIT Kanpur**

The Start-up Incubation and Innovation Centre (SIIC) at IIT Kanpur stands as one of the pioneering technology incubators in India, boasting a rich history of nurturing innovative startups and facilitating their successful exits. With notable success stories such as Curadev Pharma, Geokno, and WeatherRisk Management, SIIC has established itself as a leader in the startup ecosystem. In response to the COVID-19 pandemic, SIIC has demonstrated remarkable agility and innovation by commercializing technologies such as Swasa N-95 masks, Noccarc V310 ICU Ventilator, oxygen concentrators, and oxygen plants, contributing significantly to the national response effort.

At present, SIIC boasts a multifaceted and vibrant incubation ecosystem, with over 100 startups in its portfolio. These startups span diverse sectors such as agriculture, healthcare, aerospace, energy, water, and education, showcasing the breadth and depth of SIIC's impact across various domains. By providing comprehensive support services, including mentorship, funding, infrastructure, and networking opportunities, SIIC empowers early-stage deep-tech startups to disrupt paradigms and create meaningful impact.

Through its experience base and robust ecosystem, SIIC has emerged as a vital catalyst for driving innovation and entrepreneurship in India. By fostering a culture of creativity, collaboration, and risk-taking, SIIC continues to play a



pivotal role in shaping the future of technology-driven startups, both regionally and globally. With its track record of success and unwavering commitment to excellence, SIIC remains at the forefront of India's startup ecosystem, driving positive change and transformation across industries and sectors.

### **2.11.13 Venture Center**

Venture Center, a registered service mark, operates as a non-profit company established as an Entrepreneurship Development Center hosted by CSIR-NCL, Pune. Notably, it is the first incubator within the Council of Scientific and Industrial Research (CSIR) network. Venture Center is driven by a mission to catalyze and support the growth of technology and knowledge-based enterprises in India.

The primary objective of Venture Center is to empower scientists, engineers, and other innovators to translate their research and technology into viable enterprises and deep-tech startups. By providing a conducive ecosystem and comprehensive support services, Venture Center aims to bridge the gap between academia and industry, facilitating the commercialization of cutting-edge technologies and scientific innovations.

Through its programs and initiatives, Venture Center nurtures a culture of entrepreneurship and innovation, fostering collaboration between researchers, entrepreneurs, investors, and industry stakeholders. By offering mentorship,

access to funding, networking opportunities, and infrastructure, Venture Center enables aspiring entrepreneurs to navigate the challenges of startup development and scale their ventures effectively.

Overall, Venture Center plays a pivotal role in fostering a vibrant ecosystem for technology-based entrepreneurship, driving economic growth, and promoting innovation-led development in India. Through its commitment to nurturing and supporting science-based enterprises, Venture Center contributes to the advancement of knowledge, technology, and entrepreneurship in the country.

#### **2.11.14 mach33.aero**

mach33.aero serves as a multi-stage innovation curation and venture development platform specifically focused on deep tech ventures in aerospace and defense sectors. Its overarching goal is to address commercial, environmental, and social challenges while striving to make India self-sustainable in these strategically important domains. This initiative is spearheaded by Social Alpha, an organization that operates a nationwide network of technology and business incubation infrastructure.

Social Alpha's ecosystem encompasses various components such as product innovation labs, venture incubators, grand challenges, accelerator programs, capital pools, and market access mechanisms. Since its establishment in 2016, Social Alpha has played a significant role in nurturing over 150 startups,

including making more than 60 seed investments. Through mach33.aero, Social Alpha aims to leverage its expertise and resources to support deep tech ventures in aerospace and defense, facilitating their development and growth.

By providing a conducive environment for innovation and entrepreneurship, mach33.aero empowers startups to develop groundbreaking solutions that address pressing challenges in the aerospace and defense sectors. Through mentorship, access to funding, market insights, and collaboration opportunities, mach33.aero enables startups to navigate the complexities of these industries and accelerate their journey towards commercialization and impact.

Overall, mach33.aero, backed by Social Alpha's extensive network and experience in nurturing startups, plays a vital role in driving innovation and promoting self-sustainability in India's aerospace and defense sectors. Through its holistic approach to venture development, mach33.aero aims to catalyze positive change and contribute to the nation's strategic goals in these critical areas.

#### **2.11.15 MaDeIT Innovation Foundation**

MaDeIT Innovation Foundation stands as a design-driven Technology Business Incubator affiliated with the Indian Institute of Information Technology Design and Manufacturing Kancheepuram (IIITDM Kancheepuram), an institution of national importance funded by the Ministry of Human Resource Development, Government of India. With a mission to leverage IIITDM's core capability in IT-

enabled Design and Manufacturing, MaDeIT aims to foster technology-based entrepreneurship and support startups focused on developing technology-intensive hardware products.

MaDeIT has established a robust incubation ecosystem equipped with key building blocks, both technical and financial, to guide hardware product startups from ideation to market entry over a four-year period. Central to its infrastructure is a state-of-the-art fab lab and design studio, which provide startups with the tools and resources necessary to accelerate the design and prototyping process. By offering access to cutting-edge facilities and expertise, MaDeIT facilitates rapid iteration and refinement, enabling startups to bring their products to market more efficiently.

Through its comprehensive support services, MaDeIT empowers startups to overcome challenges associated with hardware product development, including technical feasibility, prototyping, testing, and commercialization. Additionally, MaDeIT provides mentoring, access to funding networks, and networking opportunities to help startups navigate the complexities of entrepreneurship and maximize their chances of success.

Overall, MaDeIT Innovation Foundation plays a crucial role in nurturing a thriving ecosystem for hardware product startups, driving innovation, and promoting technology-based entrepreneurship in India. By leveraging its

institutional resources and expertise, MaDeIT contributes to the growth and development of the startup ecosystem, fostering economic growth and technological advancement in the country.

#### **2.11.16 Marathwada Accelerator for Growth and Incubation Council (MAGIC)**

Marathwada Accelerator for Growth and Incubation Council (MAGIC) Aurangabad : CMIA'S MAGIC is a leading sector agnostic Startup incubator & SME Accelerator based at Aurangabad, Maharashtra & active since 2015. MAGIC is India's first Regional Industry Association-led Business Incubator & SME accelerator promoted by members of the Chamber of Marathwada Industries & Agricultural (CMIA). MAGIC is a Not-For-Profit section 8 company, driving entrepreneurship and innovation, with a special focus on student & grassroot innovators. They are sector agnostic and support innovators from all walks of life (8th pass to Ph.D. & 18 years to 75 years of age). To promote women entrepreneurship, MAGIC has established a Women Entrepreneurship Promotion Cell in 2019. MAGIC Incubator and Accelerator is recognized by the Maharashtra State Innovation Society (MSInS), Ministry of MSME Govt.of India and Govt of India Startup India Seed Fund Scheme (SISFS).

Till date, MAGIC has engaged with 8,900+ students, innovators, youths, MSMEs, Industries & Academia Faculty. MAGIC has conducted 200+ Startup & Innovation-focused events including Innovation Challenges at the National level,

Expert Sessions, Faculty Development Programs, Workshops, and Student Awareness Campaigns. MAGIC has supported 1,200+ innovators through pro-bono idea validation and mentoring support. MAGIC has incubated 160 startups across 15 industry sectors. MAGIC has got 52+ ecosystem partners from across India and pan-India connections with budding entrepreneurs and startups. At present MAGIC is providing online mentoring support to 170+ startups all over India.

**2.11.17 Pilani Innovation and Entrepreneurship Development Society (PIEDS) TBI BITS Pilani**

Pilani Innovation and Entrepreneurship Development Society (PIEDS) TBI BITS Pilani, is a non-profit society, its initiatives are spread across incubation, acceleration, seed funding, and innovation. PIEDS has supported more than 170 startups, incubated 132 startups, and funded 62 startups. It aims to provide world-class support for DeepTech Innovations, bringing advanced tech labs, mentoring experts, product innovation, and acceleration programs. It has expert mentors in defence & aerospace, robotics, IoT, and other allied areas. PIEDS has been a part of the journey of a few of the best startups in the Indian entrepreneurship ecosystem namely Grey Orange, Nextgen PMS (now Goodera), Pepper Content, Tapchief (now called Relevel by Unacademy), and many others.

### **2.11.18 KIIT-Technology Business Incubator (KIIT-TBI)**

KIIT-Technology Business Incubator (KIIT-TBI), a non profit incubator set up in 2009 as the Sec (8) company at KIIT University, Odisha. It is generously supported by various Government bodies i.e DST, BIRAC, Meity, MSME, TDB and DFID, UK and other industries to boost the entrepreneurial ecosystem in the country. It has nurtured 350+ startup and all together created 5000+ technical jobs, onboarded 50+ industries and promoted more than 180 manufacturing startup in the area of Electronics, AR/VR, Biotechnology, digital health, medtech, defence and Aerospace etc. In 2020, it has been recognised as the Centre of Excellence in incubation by DST. KIIT-TBI has expanded its presence by establishing a BIRAC Regional Techno-entrepreneurship centre (BRTC), by BIRAC-DBT, Government of India to promote startups in East and North East State of India. KIIT Technology Business Incubator won the National Award for Technology Business Incubation for the year 2017 from the Union Minister for Science and Technology, Earth Sciences.

### **2.11.19 ....The Security and Scientific Technical Research Association (SASTRA)**

Security and Scientific Technical Research Association (SASTRA) is a Section 8 Company under Rashtriya Raksha University, an Institution of National Importance and the Pioneering National Security and Police University (Ministry of Home Affairs, Government of India). SASTRA is India's first National Security Innovation Center which facilitates a three-way engagement between the

Academia, Industry and the Government for Innovation, Incubation and Technology Acceleration in the National Security domain. Effectively, they are an aggregator of solution providers working on the problem statements for strengthening the defence and internal security. With emphasis on youth engagement, the aim is to make India march proudly towards Ātmanirbharta.

The prominence of the innovation process is to understand the requirements of the operational units of the forces and to provide tailor-made solutions in association with the industry. SASTRA has also been successfully commercializing defence innovations through transfer of technology and at the same time getting associated with various defence and security agencies of the country.

#### **2.11.20 AIC-RNTU Foundation**

AIC-RNTU Foundation, supported by Atal Innovation Mission, NITI Aayog is one of Central India's leading Incubator which has been working to support the Start-ups across all the functions viz. funding, business and technical mentoring, handholding, industry connects, workshops, investor connects, events, competitions, new age labs and dedicated office space etc. With strategic corporate tie-ups from technology partners like Solidworks, PTC-Creo, MATLAB, AWS, Google Cloud, IBM, etc. the incubator provides the best of the resources to the incubated startups. The incubator also has facilities like Fab Lab (MIT USA Approved), Fabrication Workshop, Renewable Energy Lab, Advanced Material Lab etc to help startups turn their ideas into feasible prototypes. AIC-



RNTU also facilitates funding support to startups through the support from Startup India Seed Fund Scheme from DPIIT, NIDHI Seed Support Scheme from DST, and DIO – Govt. of India, along with various CSR initiatives from Private Organizations and wide network of investors.

#### **2.11.21 PSG CT – Science and Technology Entrepreneurial Park (PSG-STEP)**

The PSG-Science and Technology Entrepreneurial Park (PSG-STEP) was established in 1998 with support from DST to promote technology based enterprise in the areas of Software, Electronic Products, Hi-Tech Mechanical Products, Eco friendly Textile Products, Bio-Technology and Nano Technology using the core strengths of PSG College of Technology. PSG-STEP has an exclusive club of incubators with exclusive incubation facilities and funding mechanisms for startups in multiple technology domains with the support of NSTEDB, DST, BIRAC, MeitY Startup Hub and DIO, Government of India.

#### **2.11.22 Krishna Path Incubation Society-TBI KIET**

Krishna Path Incubation Society-TBI (TBI-KIET) jointly established by DST & KIET Group of Institutions (Host Institute) in 2007 under society registration act 1860. Till date 150+ nos. startups supported by TBI-KIET. Supported by DST, MEITY, Startup In U.P., Govt. U.P. Some of the notable schemes in progress include NIDHI-PRAYAS, NIDHI-EIR, TIDE 2.0, Seed Support Scheme & Marketing Scheme & HDFC Bank Parivartan Smartup Grants to support the startups.

**2.11.23 Incubation Centre IIT Patna**

Nestled in the sprawling and pristine surroundings at the 500+ acres campus of IIT Patna, Incubation Centre IIT Patna (known as IC and IC IITP) is the ideal destination for startups taking early entrepreneurial steps in Electronic System Design and Manufacturing, with focus on Defence and security applications, Medical Electronics, and Information and Communication Technology domains.

Our carefully designed incubation and pre-incubation programs support startups – through state of the art technical facilities required for work in ESDM sector, corporate quality office and communication facilities, mentoring support from industry / investors / IIT Patna faculty /other experts and seed fund support – to translate a technology/business innovation to a commercially viable product offering and to launch it in the market.

**2.11.24 Crescent Innovation and Incubation Council**

Crescent Innovation & Incubation Council (CIIC) has been established as a Section-8 not for profit company and registered under Indian Companies Act 2013 and being supported by 7 Union Ministries and Government of Tamil Nadu. CIIC acts as a “One Stop Shop – Startup Incubator” for startups that facilitate entrepreneurial & innovative ecosystems to all the stakeholders including the Students, faculty members, industries, investors and society at large.

CIIC is presently focusing on the disruptive technologies in the domains of Life Sciences & Defence Technology.

**2.11.25 Technology Business Incubator – National Institute of Technology Calicut (TBI NITC)**

Technology Business Incubator (TBI-NITC) at NIT Calicut was established in 2003-04 with the support of NSTEDB, DST to develop technology based entrepreneurs. TBI NITC is a sector agnostic incubator and supports ventures from IT, Electronics, Electrical, mechanical and agriculture sectors. The startups in TBI NITC has received support from DST, Ministry of MSME, MeitY, BIRAC and MoE/AICTE.

**2.11.26 Amity Technology Incubator**

Amity Technology Incubator (ATI) has been at the forefront of technology and innovation by generating and supporting Entrepreneurs from all across the Industry. ATI takes pride in introducing the incubator as the most comprehensive ecosystem across the Entrepreneurial world with a 360-degree support by way of Infrastructure, Mentoring, Human Resource Support, IPR protection, Funding Support, Technology and product development support. The incubator started its operations in the year 2007 under the aegis of our Honorable Chancellor Dr. Aseem Chauhan to support innovative ideas and is supported by Department of Science Technology, Atal Innovation Mission, NITI Aayog, Ministry of Electronics Information Technology and MSME. So far the incubator had

supported more than 650 ventures and had invested in 75 plus startups through its investment vehicle, Amity Capital Ventures.

### **2.11.27 IITB Innovation Centre**

IITB Innovation Centre (IITB-IC) was established in 2009 by the Host Institution, IIT Bangalore. Since inception, IITB-IC has incubated nearly a 100 startups. The incubator takes pride in handholding innovators in their challenging phases of building thriving enterprises in the earliest and hardest part of the journey — the pre-incubation and incubation stages. Our vision is to contribute to India's economic development and social wellbeing by improving the survival and growth of new tech ventures. The Incubator is supported by Ministry of Electronics and IT under the TIDE 2.0 Scheme, Ministry of Commerce and Industry (DPIIT) under the Startup India Seed Fund Scheme (SISFS) and is a Partner Incubator with the Defence Innovation Organization (DIO) under the iDEX Project.

### **2.11.28 International Institute of Information Technology - Hyderabad Foundation**

The Centre for Innovation & Entrepreneurship(CIE) was set up in 2008. CIE-IIITH was supported by DST (TBI) and MeitY (TIDE) in the initial years. Since 2015, the 40,000 sq. ft incubator, which can host 120+ startups, has been financially self-supporting. Under the CIE umbrella, there are 3 active incubators: Deeptech, MedTech, and Social Tech. In Nov 2021, CIE-IIITH was awarded INR

5 Crores by DPIIT under Startup India Seed Fund Scheme to provide financial assistance to early-stage technology startups and also, got selected for DST's NIDHI Accelerator program with a focus on supporting startups in Mediatech Domain; the accelerator program is called AI in Mediatech; upto INR 40 lacs per cohort support will be provided by GoI. This is jointly run by Aarka Media (The production house of Bahubali movies).

**Table 2: Challenges Launched**

<b>Challenge</b>	<b>Nos. of challenges</b>	<b>Remarks</b>
DISC 1	11	Launched on 04 <sup>th</sup> Aug 2018 by Hon. Raksha Mantri at Bengaluru
DISC 2	4	Winners announced during Aero India on 21 Feb 2019
DISC 3	3	
DISC 4	11	
DISC 5	35	Prob statements(PS) from OFB/DPSUs also launched in addition to Armed forces PS
DISC 6	38	
DISC 7(SPRINT)	69	PS only from Navy
iDEX PRIME (SPRINT)	6	PS only from Navy with increased grant amount of Rs. 10 Cr

Challenge	Nos. of challenges	Remarks
iDEX PRIME (SPACE)	6	PS related to space mission
DISC 8	23	PS related to space mission
DISC 9(Aero India cyber security)	28	PS related to Cyber security
DISC 10	35	
iDEX PRIME (X)	13	
iDEX4fauji	5	Problem and Solution provided by in-service soldiers
DISC 11	22	PS from Armed forces and DPSUs
ADITI	17	Increased Grant of 25 Cr for 30 critical and advanced technologies. PS from Armed forces and Defence Space Agency

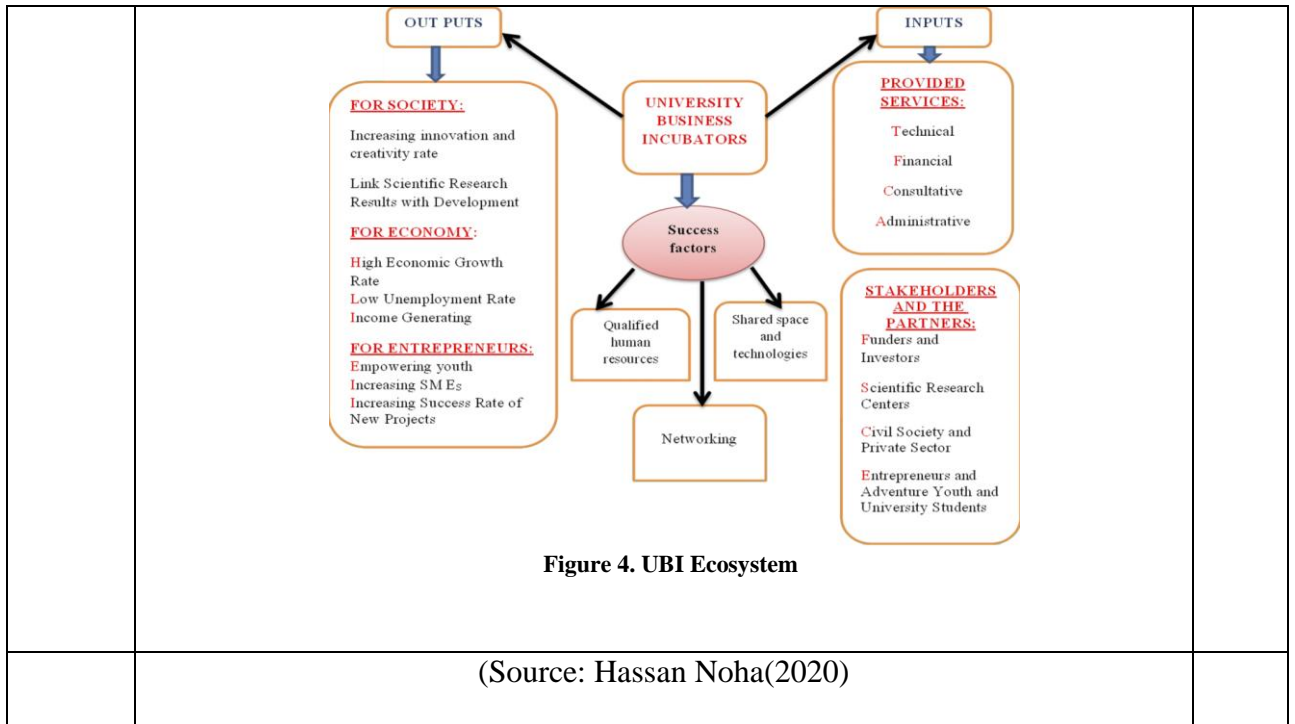
### 2.12 University Business Incubators (UBIs)

It's true that UBIs have become instrumental in bridging the gap between scientific research and economic development by fostering entrepreneurial activities. These incubators leverage the resources and expertise available within universities to support startups and accelerate entrepreneurship strategies.

By providing a supportive environment for entrepreneurs, UBIs enable them to access resources such as mentorship, funding, office space, and networking opportunities. Moreover, being affiliated with universities grants UBIs access to cutting-edge research and academic talent, which can further enhance the development of innovative startups. The collaboration between universities and UBIs is mutually beneficial. Universities benefit from the commercialization of research outcomes and the generation of revenue streams through technology transfer and partnerships with startups. On the other hand, startups benefit from access to research facilities, expertise, and potential partnerships with academic researchers.

In recent years, university incubators have evolved to become more entrepreneur-centric, offering tailored support and services to meet the unique needs of startup ventures. This evolution has made university incubators increasingly attractive to entrepreneurs seeking to commercialize innovative ideas and technologies.

Overall, the success of UBIs in tying scientific research with economic development underscores the importance of collaboration between academia and entrepreneurship in driving innovation and growth. As universities continue to play a crucial role in fostering entrepreneurship, university incubators are expected to remain a key driver of innovation and economic development globally. Hassan Noha(2020) explains how UBIs succeeded to tie the results of scientific research with economy and development through entrepreneurial activities to accelerate and realize entrepreneurship strategies.



### 2.13 Funding Mechanism

Partner Incubators provide the necessary knowledge in the field of developing business and the best options to scale up the businesses. All the PIs have association with select few investors who can provide funds to startups and MSMEs on recommendations of the PI. iDEX-DIO also has developed iDEX Investors Hub (iIH) of selected investors.

### 2.14 iDEX Investors Hub (iIH)

The partnership between iDEX (Innovations for Defence Excellence) and the Indian investor community represents a significant step towards accelerating the growth of the Defence Ecosystem in India. By collaborating with investors, iDEX aims to provide a unified platform for investors to explore opportunities and innovations within the Defence Sector.



The Memorandums of Understanding (MoUs) signed by the Defence Innovation Organisation with ten investors are aimed at facilitating greater synergy and increased investments within the iDEX Ecosystem. Recently, another five investors were onboarded under iIH umbrella during recently held DefConnect 2024. The list of these 14 investors are as follows:-

1. ITI Growth Opportunities
2. Speciale Invest
3. Indian Startup Factory
4. Lead Angels
5. Sea Fund
6. Silverneedle Ventures
7. Chandigarh Angels Network
8. LetsVenture
9. Agility Venture
10. Venture Catalysts
11. Mount Tech Growth Fund
12. IdeaSpring Capital
13. Artha 99
14. O2 Angel Network LLP
15. Samarthyia

These partnerships between iIH and investors are structured around four key pillars:

**Access:** iDEX provides curated access to investors who are specifically interested in the defence and deep technology sectors. This access enables startups and MSMEs operating within the Defence Sector to connect with potential investors who understand the unique challenges and opportunities within the industry.

**Skill Development:** Through master classes conducted by investors, startups and entrepreneurs gain valuable insights into the process of raising investments. These sessions offer guidance on navigating the complexities of fundraising, improving the readiness of startups to attract investment.

**Mentoring:** Investors play a crucial role in providing mentorship to startups and MSMEs, leveraging their expertise and experience to support the growth and development of these enterprises. Additionally, peer-to-peer learning opportunities enable startups to learn from others who have successfully raised funds, fostering a collaborative ecosystem.

**Showcase:** iDEX facilitates the showcasing of technology and innovations from startups and MSMEs within national and international forums. This exposure not only provides visibility to these enterprises but also creates investment opportunities by attracting potential investors interested in cutting-edge technologies within the Defence Sector.

### 2.15 **Investment Success Stories**

The recent efforts of the Ministry of Defence to create an interest for Angel investors, venture capitalists and private equity players in defence sector startups can be traced to the recent \$1 million Angel investment by Keiretsu Forum in Aadyah Aerospace Private Limite;. Artiman Ventures, Qualcomm Ventures and Walden Riverhood Ventures backed Tonbo imaging, WRV Capital and Indus Age Partners backed Idea Forge and many more. During DefConnect 2024, Speciale Invest was felicitated by RM for investment of more than Rs 25 Cr in iDEX winners under iIH. The investment companies under iIH have taken the Pledge Fund corpus from 200 Cr to more than 400 Cr.

### Chapter -3: Research Method and Data Collection

#### 3.1 Stakeholders

As per the topic of the dissertation, the stakeholders were all the **Partner Incubators** onboarded by iDEX-DIO and the Start Ups/MSMEs who were incubatee with respective PIs post their selection as **DISC winners**.

#### 3.2 Research with Partner Incubators

Out of 28 approved Partner Incubators of iDEX in the country, 9 Partner Incubators were approved in last six months. The Year of induction of all 28 iDEX Partner Incubators is as follows:-

**Table 3. Year of Onboarding of PI**

Ser No.	Name of PI	Year of Induction
1.	Maker Village, Kochi	2018
2.	Indian Institute of Science, Bangalore	2018
3.	Indian Institute of Technology, Hyderabad	2019
4.	SINE, IIT Mumbai	2018
5.	CIIE, IIM Ahmedabad	2018
6.	IITM Incubation Cell, IIT Chennai	2018
7.	T-Hub, Hyderabad	2019

Ser No.	Name of PI	Year of Induction
8.	FORGE, Coimbatore	2019
9.	FITT, IIT Delhi	2019
10.	Technology Incubation and Entrepreneurship Development Society (TIEDS)	2020
11.	IIT Guwahati Technology Incubation Centre (IITG-TIC)	2020
12.	SIIC IIT Kanpur	2021
13.	Venture Center	2021
14.	mach33.aero ( An initiative of Social Alpha )	2021
15.	MaDeIT Innovation Foundation	2021
16.	Marathwada Accelerator for Growth and Incubation Council (MAGIC)	2022
17.	Pilani Innovation and Entrepreneurship Development Society (PIEDS) TBI BITS Pilani	2022
18.	KIIT-Technology Business Incubator (KIIT- TBI)	2022
19.	The Security and Scientific Technical Research Association (SASTRA)	2022
20.	AIC-RNTU Foundation	2023
21.	PSG CT – Science and Technology Entrepreneurial Park (PSG-STEP)	2023

Ser No.	Name of PI	Year of Induction
22.	Krishna Path Incubation Society-TBI KIET	2023
23.	Incubation Centre IIT Patna	2023
24.	Crescent Innovation and Incubation Council	2023
25.	Technology Business Incubator – National Institute of Technology Calicut (TBI NITC)	2023
26.	Amity Technology Incubator	2023
27.	IIITB Innovation Centre	2023
28.	International Institute of Information Technology - Hyderabad Foundation	2023

Partner Incubators onboarded early have been able to involve in majority of iDEX projects launched so far. However, Partner Incubators onboarded in last one year or so have not contributed to the iDEX scheme so far.

Each Partner Incubator has a website which gives the goal of the organisation, its structure, Ministries they are dealing with, notices and option to contact them for any query.

Older PIs have youtube videos available about the workshops conducted on various DISC launch in presence of iDEX-DIO program directors. In few videos even the nodal agencies have participated to clarify the user requirement.

In the recent past even X.com(earlier Twitter) handle of each PI is available to be followed. These handles give news regarding day to day programmes run by these PIs.

Each Partner Incubators have assigned Point of Contacts to deal with iDEX projects. The e-mail addresses of the Point of Contact have been given in iDEX website.

During the course of research, visit was planned to SINE, IIT Bombay, FITT, IIT Delhi and Venture Center, Pune. A walk around was conducted at these PIs and the office set up, space for resident start ups and the laboratories available at the Incubator was seen. Pictures of the visit to various PIs is placed at **Appendix-D**.

Out of the 28 Partner Incubators inboarded into iDEX-DIO, five Partner Incubators, which are involved in large number of iDEX projects were selected for the detailed survey. The general information was sought in writing and the balance questions were put up through interviews.

The complete questionnaire is placed at **Appendix-A** and the replies to the general information about the PI obtained are placed at **Appendix-C**.

### 3.3 **Research with DISC Winners**

A questionnaire was given to the iDEX winners from DISC 1 to DISC 8(Winners declared upto End Aug 23 were only considered). The questionnaire is placed at **Appendix-B**

The questionnaire was sought from 150+companies, and 34 companies responded. Considering the number of companies undertaking more than one iDEX challenge, the data received from 34 companies is approximately 10% of total iDEX winners.



## Chapter -4: Data Analysis and Findings

### 4.1 Variety of PIs

Amongst all the PIs of iDEX scheme, we have a mix of Incubators with academia and with industry as well. The IITs have a sound technical support through faculty of their own institute. Also the labs in PIs within IITs are supported by better labs in the respective departments of the Institute, if required. IIM Ahmedabad Venture, has a very robust business support but lack in technical expertise which is compensated by them through liaisoning with IITs. MAGIC, Aurangabad has a sound Industrial support through the entire Marathwada region. Forge, Coimbatore, Maker Village, Kochi and T-hub, Hyderabad have developed a sound ecosystem of technical support through Industries around their respective areas.

### 4.2 Case Studies

A detailed questionnaire was circulated to following PIs. The selection of PIs was done based on the high number of projects being handled by these PIs.

S.No.	Name of PI	Name of PoC	Phone No.
1.	Forge, Coimbatore	Ms Ashwini Metri	+91 7397 761 208
2.	T-Hub, Hyderabad	Mr. Drona Sreenivas	+91 73309 41039
3.	SINE, IIT Bombay	Ms. Rashmi	+91 93235 97846
4.	FITT, IIT Delhi	Mr. Manveen Chadha	+91 97189 34343
5.	IIT, Hyderabad	Mr. Sajjad Ali	+91 83310 36155

The answers to the data concerning general information about the PI and the number of projects being handled were sought from above PIs and the same is placed at Appendix-A

Also, the balance questionnaire regarding the processes being followed by PIs as per the guidelines laid by iDEX-DIO was discussed during the interview. The snapshots of the online interviews held are placed at Appendix-E. The replies received during the interview is highlighted in succeeding paragraphs.

**Question 2. Objectives and Alignment:**

Partner Incubator	Response to Questionnaire
T-Hub, Hyderabad	<p>(a) How well does your incubator align with the objectives of iDEX-DIO?(You may give the answer in %age)</p> <p>Our incubator is completely aligned with the objectives of iDEX-DIO. We focus on fostering innovation and nurturing startups/MSMEs working on cutting-edge defence technologies. We are equipped to facilitate the resources to the startups meeting the requirements of iDEX.</p> <p>(b) Area under the objectives of iDEX-DIO which need further improvement in your incubator and the suggested way ahead.</p> <p>One area where we are constantly trying to improve is providing funding support. T Hub is in the process of collaborating with</p>

Partner Incubator	Response to Questionnaire
	<p>various funding entities to establish a mechanism to fund the suitable startups.</p> <p>(c) Have you successfully discovered and nurtured startups/MSMEs working on innovative defence technologies?</p> <p>Yes, we have successfully discovered and nurtured startups/MSMEs working on innovative defence technologies like Drones, Anti drones, Radar simulators, Deep tech, AI/ML, Electro-optical devices etc.</p> <p>(d) In your assessment what are the hurdles in discovery and nurturing of startups/MSMEs you are encountering and its suggested remedy.</p> <p>The main hurdles we encounter include limited awareness among startups about defence sector opportunities. To remedy this, we are conducting various outreach activities both organic and inorganic through various digital marketing platforms.</p>
ITIC, IIT Hyderabad	<p>(a) Alignment with the iDEX objectives: 100%</p> <p>(b) Objectives which need further improvement: - More rigorous outreach and promotion of iDEX-DIO programs at various levels.</p> <p>(c) Discovery and nurturing: Yes</p> <p>(d) Any hurdles: NA</p>
FITT, IIT Delhi	<p>We align with the objective of IDEX to 100%. Companies look for Technical Support basically for the technical validation of</p>

Partner Incubator	Response to Questionnaire
	<p>each milestone where they need support in terms of how quickly we can provide that support and review the milestones. Even during the High Power Steering Committee(HPSC) meeting, we provide our academic representative. Whenever they have asked for some faculty or person from industry, they join the meeting and also for every case we have a faculty reviewer who provides his technical inputs at each and every milestone.</p> <p>The type of support may depend upon Start-up to Start-up. There are teams who look for investors to raise money. Some of the start-ups need guidance on marketing side or need PI's connection. With respect to industry, as we have a strong alumni connect, we can connect the to some relevant industries or to some relevant investors because they are looking to raise funds. So all that support we provide to them because they are our iDEX portfolio team.</p> <p>In terms of improvement, we are looking to get a kind of a model where we can invite our mentor pool of Technical Experts plus the people from Army, Navy and Air Force who are very proactive in all these iDEX schemes as a nodal officer or as a. end user. It is yet to be launch, it is still in planning stage. The model would have once in a month, or once in two months call one-on-one mentor with our startups so that all startups come and</p>

Partner Incubator	Response to Questionnaire
	<p>meet all these mentors and understand more applications and what problem armed forces are facing,. Most of the time startups also apply for open challenges and they have lot of things in their mind and they look for guidance from army airforce or Navy officials so that they can deploy it accordingly. With this model start-ups can decide whether they should submit their application or not. While we have achieved everything 100%. But from each and every learning, even from startup, we try improvements whatever possible in our processes.</p> <p>We are not facing as such any problem in discovery of start ups. iDEX-DIO posts different challenges on their portal and startup directly apply and then they select one of the partner incubator. We are the choice for startups who are in northern side of the country because they get all that facilities in terms of technical and other lab support. For Nurturing, definitely there is a scope for improvement at each and every point, the way we are supporting them or nurturing them in their product development.</p>
SINE, IIT Bombay	<p>(a) 100%</p> <p>(b) For a ‘ idea stage’ start-up converting the idea into Proof Of Concept(POC) or prototype is a little challenge. whenever the startup has the relevant expertise or they have something done in that domain and they have at least POC or prototype ready, then</p>

Partner Incubator	Response to Questionnaire
	<p>probably it is easy to work for iDEX project. So it is comfortable for them to convert that into the product within that stipulated timeline with the help of nodal agency and the funds required.</p> <p>But to make the ‘early stage’ start-ups ready to apply for iDEX type problem statement, a gap remains for the start-up to complete it in a given time and to arrange the matching contribution. There are some different funds or different grants from the government from other entities like DST, Meity etc in which the startups get that small funding and they do that kind of prototype development, which is feasible of a early stage start-up. But it case of iDEX it is a challenge to come from idea to prototype stage. This gap can be filled by small kind of a Entrepreneur in Residence (EIR) or grant program by which they can become ready for the iDEX challenges. Further, if focus area are defined by armed forces and it happens to be a technical strength of start-up or innovator and they are made aware of the use case for defence then a small portion of the grant overall allotted for iDEX project could be utilized for the people to make the prototype, something inline with the model followed by DST, Meity etc.</p> <p>Further the projects are generally delayed due to following reasons:-</p>

Partner Incubator	Response to Questionnaire
	<p>(a) Technical glitch, design issue etc.</p> <p>(b) Start-up not able to provide the Matching contribution on time</p> <p>(c) Nodal agency inputs delayed</p> <p>(d) The early stage startups or innovators, they are not aware that there is a use case in the defence. So awareness needs to be there in the researcher or scientist community that these kind of problem statements or these kind of focus areas are there for defense/PSU.</p> <p>Secondly, the problem statement are very specific like for a particular aircraft or for a particular submarine this kind of problem segment is there. But beyond that, if the nodal agency or iDEX can specify some <b>focus area</b> like in the next two years, Navy's focus will be into AI/ML based technologies or some other latest technology. If armed forces broadly share their focus areas, then probably early stage innovators can start working on that direction.</p>
Forge, Coimbatore	<p>(a) How well does your incubator align with the objectives of iDEX-DIO?(You may give the answer in %age)</p> <p>Forge has an 100% alignment with IDEX-DIO Objectives and beyond. Forge is committed to supporting Startups/MSMEs in 8</p>

Partner Incubator	Response to Questionnaire
	<p>focus sectors among which Defence, Security, Aerospace, Space and Communications is one among them.</p> <p>Forge focus sectors are:</p> <ol style="list-style-type: none"> <li>1. Driving Mobility's Next Gen Tech</li> <li>2. Reengineering Machines &amp; Materials</li> <li>3. Bolstering Military &amp; Security Capabilities</li> <li>4. Powering Assistive &amp; Accessibility Innovations</li> <li>5. Industrialising Cyber Physical Systems</li> <li>6. Fostering Sustainable Energy &amp; Resources Innovations</li> <li>7. Pioneering Precision Health Technologies</li> <li>8. Engineering Climate Resilience Solutions</li> </ol> <p>(b) Area under the objectives of iDEX-DIO which need further improvement in your incubator and the suggested way ahead</p> <p>Helping startups in raising of funds/investment and identifying the Production Partner to scale up the production on successful graduation from iDEX has been our thrust/objective in that direction we are still working on it.</p> <p>Though Forge actively interacts with DIO on various projects, outreach programs and many more, we would like to further</p>



Partner Incubator	Response to Questionnaire
	<p>improve our communications on discovering the needs and demand of Armed forces and DPSUs.</p> <p>(c) Have you successfully discovered and nurtured startups/MSMEs working on innovative defence technologies?</p> <p>Yes, we have successfully discovered and nurtured startups/MSMEs working on innovative defence technologies like Drones/UAV, DefSpace, Digital Twin, Situational Awareness, Underwater Photography, XR-based training simulators, etc.</p> <p>(d) In your assessment what are the hurdles in discovery and nurturing of startups/MSMEs you are encountering and its suggested remedy?</p> <p>A key challenge lies in raising awareness among startups about the potential opportunities within the defense sector. Many lack understanding of the pathways available for developing and supplying defense solutions.</p> <p>To remedy this, we are conducting outreach programs, educate and guide about iDEX Open Innovation concept and motivate them to apply for OC and/or apply for specific thematic areas/challenges in the next set of DISC cycles.</p>

Partner Incubator	Response to Questionnaire
	<p>Enable them with technology showcase programs, boot camps to enable and develop a dual usecase solutions and quicker ways to early user/customer validation vs. complete development of the solution followed by testing.</p>

**Question 3. Startup Pipeline and Defence Needs Assessment:**

Partner Incubator	Response to Questionnaire
T-Hub, Hyderabad	<p>(a) How do you identify startups/MSMEs that can address the technological needs of India's Armed Forces?</p> <p>We identify startups/MSMEs through scouting programs, defence networking events, and collaborations with academic institutions focusing on relevant research areas etc and spread awareness about various defence challenges. T-hub acts as a catalyst to bridge the gap between fundamental research and Application research with the help of Defence Advisory committee established at T-hub.</p> <p>(b) How do you facilitate the interaction of startups/MSMEs with the iDEX-DIO team and Nodal Agency?</p> <p>We facilitate interaction through regular networking events, dedicated liaison officers, and online platforms for project review and regular monitoring of the startups.</p>

Partner Incubator	Response to Questionnaire
	<p>(c) How frequently do you interact with iDEX-DIO to understand current technological requirements?</p> <p>T-hub encourages and assists relevant startups to apply under open challenge category, which are having products with latest technology.</p>
ITIC, IIT Hyderabad	<p>(a) To identify startups/MSMEs: Based on the startups portfolio, technology readiness and founders expertise etc.</p> <p>(b) Facilitate the interaction: Through emails, telephone, virtual and physical meetings.</p> <p>(c) Frequency of interaction: as and when there is a requirement.</p>
FITT, IIT Delhi	<p>(a) Once the start up chooses the partner incubator then you start incubating, we start mentoring them from our side we help them in filling the PDP/PMA. So there we provide all the support in terms of problem understanding and further during signing of the agreement. It's up to the end user and nodal officer and iDEX at that point of time and we are not involved. Once they have finally signed the agreement and then they need further support and technical sheet filling there we provide support. We don't face any challenge as such when we do outreach programs. For our resident incubatee, the portfolio startups we have incubated by understanding their product and if it suits to the challenge that is launched, we'll help them to apply for that challenge.</p>

Partner Incubator	Response to Questionnaire
	<p>(b) Every start up gets one program person ones he wins the challenge from DIO as well as nodal agency. So if there is a requirement of start-up, say a query or to understand the problem statement better, we provide that connection, facilitate them so that they can go and meet the end user or nodal officer and support is provided.</p> <p>(c) Our interaction with iDEX is almost on everyday basis because we have lot of startups and every week we have 3-4 reviews. In this way our interaction is almost every day.</p>
SINE, IIT Bombay	<p>(a) Whichever startups comes to us for incubation or we do the other activities also in that if we feel that there is could be a potential use case for defence or PSUs, we ask them to go through these challenges and we make them realize that if there can be a little tweaking in their solution, which can be a use case for the defence. When the problem statement is released, we go through the problem statements. If we feel that a specific start up is right contender who can apply for that, we do suggest the start up to apply for that particular challenge. Otherwise, when the challenge or problem statement is released, we do the outreach specifically for IIT Bombay. We do the outreach because we feel that there are so many technologies where the faculty or researchers may not be even aware that this could be a use case,</p>

Partner Incubator	Response to Questionnaire
	<p>so we generally do one focused outreach event for IIT Bombay and a general outreach events for the other people as well.</p> <p>(c) In general, nodal agency communicates with iDEX most of the time. The nodal agency communication is with iDEX and the startup. Every project has one point of contact from iDEX team also. It's generally not required to facilitate the interaction unless there is some issues between the parties.</p> <p>(d) We interact not specifically for the current technological requirements, but whenever the problem statements are open or called for, application is open. If there are some issues from the startups we try and get in touch. It depends on case to case basis.</p> <p>In the technological requirements in terms of the problem statements, if once the startup is onboarded then there is a lot of interaction. So if there is a grantee which we onboard and then they have some technical support , then there is a frequent discussion with iDEX-DIO.</p>
Forge, Coimbatore	<p>(a) How do you identify startups/MSMEs that can address the technological needs of India's Armed Forces?</p> <p>Multidisciplinary Scouting Strategies</p> <p>Forge utilizes a comprehensive approach to identify promising startups for the iDEX program:</p>

Partner Incubator	Response to Questionnaire
	<ul style="list-style-type: none"> <li>• Online and Offline Scouting</li> <li>• Paid and non-paid scouting platforms are leveraged to reach a wide range of startups.</li> <li>• Through grant programs, market access programs, acceleration programs, and bootcamps.</li> <li>• Targeted social media campaigns further amplify their reach.</li> <li>• Collaborations with Academic Institutions.</li> <li>• Other Incubators that are not partners of DIO.</li> <li>• Industrial corporations &amp; ecosystem enablers like TIDCO, AIDAT, SIDM, TiE, Angel investors etc.</li> </ul> <p>This multidisciplinary approach ensures Forge can effectively identify and connect with talented startups across diverse channels.</p> <p>(b) How do you facilitate the interaction of startups/MSMEs with the iDEX-DIO team and Nodal Agency?</p> <p>Forge fosters open communication and collaboration through a variety of channels:</p> <ul style="list-style-type: none"> <li>• <b>Virtual Communication:</b> Regular virtual meetings and calls ensure efficient interaction, regardless of location.</li> </ul>

Partner Incubator	Response to Questionnaire
	<ul style="list-style-type: none"> <li>• <b>Program-Integrated Events:</b> Networking events and programs specifically designed for the iDEX initiative provide valuable opportunities for startups and stakeholders to connect.</li> <li>• <b>Targeted Outreach:</b> Forge actively conducts outreach sessions to raise awareness and educate potential participants about the program.</li> </ul> <p>Forge facilitates deeper engagement through in-person meetings held at various locations:</p> <ul style="list-style-type: none"> <li>• <b>DIO Office (Delhi):</b> Meetings at the DIO office enable direct interaction with key decision-makers.</li> <li>• <b>Startup Locations:</b> On-site visits to startups foster a deeper understanding of their capabilities.</li> <li>• <b>Nodal Officer Offices:</b> Meetings at Nodal Officer offices ensure clear communication and alignment with regional needs.</li> <li>• <b>Demo Locations:</b> Dedicated demo locations allow startups to showcase their innovations to potential partners and stakeholders.</li> </ul> <p>This multifaceted approach creates a supportive environment for open communication and collaboration, ultimately propelling the success of the iDEX program.</p>

Partner Incubator	Response to Questionnaire
	<p>(c) How frequently do you interact with iDEX-DIO to understand current technological requirements?</p> <p>On a periodic basis. During interactions with Nodal officers and Nodal agencies. Talk with veterans. On understanding some of these requirements, and on scouting of new-tech/applications relevant for Defence needs/demands, we systematically review the startup/MSME product/Project and promote them to apply for Open Challenge Applications.</p> <p>Our in-house technical team also works along with the startups to review their proposal and support in submitting a compelling OC proposal. We also showcase our defense startups with some of the veterans by bringing them as experts for mentorship and evaluations frequently. This is a continuous process.</p>

**Question 4. Mentorship and Milestones:**

Partner Incubator	Response to Questionnaire
T-Hub, Hyderabad	<p>(a) Describe the mentorship process for selected startups/MSMEs.</p> <p>Mentorship involves assigning experienced mentors, providing technical guidance, and facilitating access to relevant resources and networks. There is a pool of mentors who are exclusively</p>



Partner Incubator	Response to Questionnaire
	<p>scouted for defence projects from domains like cyber security, radar, drones and anti drones, AI/ML etc.</p> <p>(b) How do you set milestones and objectives for projects in line with iDEX-DIO guidelines?</p> <p>Milestones and objectives are set in consultation with Nodal agency (User group) and with the help of T-hub mentors/ subject matter experts.</p> <p>(c) How do you ensure technical and financial due diligence for SPARK Grantees?</p> <p>Technical and financial due diligence for SPARK Grantees is ensured through rigorous evaluation processes and regular progress reviews. It includes review of UCs, actual invoices, milestone completion reports and relevant technical documents applicable for that milestone.</p>
ITIC, IIT Hyderabad	<p>(a) Mentorship process: The startup approaches us with the requirement of support and we analyze the type of mentorship required and we collaborate with expert mentor through our mentorship pool of more than 150 experts pan India and abroad.</p> <p>(b) Set milestones and objectives: frequent office hours with startups to know the status.</p> <p>(c) Ensure technical and financial due diligence: We use the inhouse expertise at first stage and then technological expert</p>

Partner Incubator	Response to Questionnaire
	<p>advice in second stage and also in line with Nodal Agencies inputs.</p>
FITT, IIT Delhi	<p>The financial due diligence is being done for releasing the tranche as per the guidelines that 10% of the amount has to be put in by startup before starting the releasing the first tranche.</p> <p>Also at the end of any milestone, all due diligence the financial due diligence is taken care by iDEX. We only do the technical due diligence of the milestone. We provide our take on the milestone such as whatever they have said, whether they have achieved or not or if there anything is missing. And then it is also being verified by the nodal officer. Once the nodal officer and PI says that it's good to go. Then they release the next tranche.</p> <p>Mentorship is dependent on the requirement of startup for iDEX people. Because it depends what kind of support they need at what point. And for review, it's a standard process where we involve the relevant academic expert or maybe the industry expert at each and every milestone and also if required we visit their facility to see what they have developed and whether milestone claimed is it was achieved or not, it's functioning or not. So all that parameter are checked and then we give green signal.</p> <p>The start-up submits that after certain time period it will take to complete a milestone, let's say two months for a milestone so</p>

Partner Incubator	Response to Questionnaire
	<p>before completing the duration of two-month. We start chasing them and understanding what is the requirement and iDEX representative also starts chasing them and we also we do a review meeting to understand how is the progress of the project.</p>
SINE, IIT Bombay	<p>(a) The mentorship process for selected startup, so generally it is on case to case basis also they we we do share with them the list what we can offer like one is the mentorship from the IIT Bombay faculty members in general my the process that SINE follows is that for every milestone. Review we I mean for every project, for the milestone review, we try to engage with the expert faculty member in the specific domain. So every review, at least first two to three reviews milestone reviews when there is a technical development, design, technical development and that kind of things are there, then we involve the faculty members, we ask the startup to present to the faculty members there if there are any questions, any query is concerned, I put it in the report for the nodal agency. As well and then. If any support is required for that particular startup that also we try to connect with the faculty. Members. So one is technical mentorship. Basically more more is the technical mentorship. But beyond that for the matching contribution and all that we do the business mentorship also in in-house business mentorship as well as the. We connect them to the</p>

Partner Incubator	Response to Questionnaire
	<p>Mentors. But if you identify a person, generally faculty members doesn't say no for tech review in general, where there are couple of cases where I had received reject from the faculty members, my main challenge is that the startups also sometimes refuse to share the data. It happens in a way that is the faculty member may need some more data. Faculty member ask for some more questions and if the startup is not willing to share the data or if there is no store in the meeting. If the communication doesn't go well. Then it becomes. For me, it becomes very difficult. There are various cases where everything is very smooth. Faculty members are part of the review. They have been reviewing the startup right from the beginning. In fact, when I onboard the startup I. Plan a introductory meeting with the all the stakeholders so that and even after first milestone, second, third milestone, we try to invite the nodal agency also for that there are various cases. But nowadays, because the number of startups or number of grantees are so high. And Timeline is a pressure it is the process is little, I mean diluted. It's not that easy to get the faculty members getting their time, asking the startup know that they'll see everybody coming together talking to them. So I mean I am facing little challenge but still we try to maintain that.</p> <p>(b) On milestones, Generally, the responsibility lies with the</p>

Partner Incubator	Response to Questionnaire
	<p>because the nodal agency gives the PDS PRU. They have the set everything for any every project they have the set milestones.</p> <p>Model. To. They have the set modules like if there is a project to be developed. What will be the modules in that yes and the line of the milestone is also similar like first milestone will be the kick off Grant then second will be the designing part of it. Third will be prototyping development then they will go for the field trials and finally the deliverable. So this is the Sequence. In general, this is a sequence, So what the startup tries to do is that they need to only fit into the these kinds that that structure their milestone. So like when they are saying designing part of it, they will try to say will design module A, module B, module C, something like that.</p> <p>And this milestone setting is a sort of mechanical process. Some things which we need to take care when they setting the milestone that whether they have considered the certification part of it approvals or some regulatory approvals if required. Something like that that majorly we take care of it when we when when I go through there myself. But it's more on more or less review part of it which I do. Not setting up of the milestones.</p> <p>(c) Yeah, financial due diligence. Basic overview. I do it technical, I mentioned about the faculty members financially, we do it at SINE level. We do it little bit of financial due diligence</p>

Partner Incubator	Response to Questionnaire
	<p>but more or less we are dependent on the C certified uses. Their CA has to go through it and then that certification.</p>
<p>Forge, Coimbatore</p>	<p>(a) Describe the mentorship process for selected startups/MSMEs.</p> <p><b>Structured Mentorship for iDEX Innovators</b></p> <p>Selected startups and MSMEs benefit from a structured mentorship process designed to foster their growth and success. This process involves several key steps:</p> <p><b>Goal Setting and Alignment:</b> Mentors collaborate with their assigned startups/MSMEs to establish clear goals and ensure alignment with program objectives.</p> <p><b>Action Plan Development:</b> A customized action plan is developed outlining the specific actions and milestones to be achieved.</p> <p><b>Ongoing Guidance and Support:</b> Mentors provide ongoing guidance, support, and monitoring throughout the program. This includes regular check-ins, feedback, and problem-solving assistance.</p> <p><b>Mentor Identification:</b> Forge identifies qualified mentors with expertise relevant to the needs of participating startups and MSMEs.</p> <p><b>Needs-Based Matching:</b> Mentors are matched with startups/MSMEs based on their specific needs and</p>

Partner Incubator	Response to Questionnaire
	<p>challenges.</p> <p>This structured approach ensures that iDEX innovators receive targeted support and resources to maximize their potential for success.</p> <p>(b) How do you set milestones and objectives for projects in line with iDEX-DIO guidelines?</p> <p>During the due diligence and contract execution process, Forge plays a key role in aligning startups/MSMEs with iDEX guidelines. This includes:</p> <p><b>Context Setting and Guidance:</b> Forge guides startups in designing a milestone plan that aligns with iDEX guidelines.</p> <p><b>Execution Excellence through PMA:</b> Forge goes beyond mere grant management. Instead, they actively enable startups to plan and achieve execution excellence by focusing on "defining and building the right product." This is achieved through the rigorous use of the PMA dashboard and adherence to the iDEX-defined Product Management Approach.</p> <p><b>Milestone Review:</b> The milestones and objectives defined, planned, and drafted by startups are then reviewed by the Program Implementation (PI) team, Nodal Officer (NO),</p>

Partner Incubator	Response to Questionnaire
	<p>and DIO themselves to ensure alignment with iDEX guidelines.</p> <p><b>External Mentorship:</b> When Forge's internal team lacks the technical expertise to guide a specific startup, they proactively invite and connect external mentors to provide the necessary support.</p> <p>(c) How do you ensure technical and financial due diligence for SPARK Grantees?</p> <p>Technical and financial due diligence are undertaken according to iDEX guidelines/policy.</p> <p><b>Technical review and Due Diligence</b></p> <p>Technical due diligence focuses on the Product Management Approach (PMA) Guidelines elaborated in the guidelines published by RM, Shri. Rajnath Singh ji.</p> <p>Each individual project will be assigned an internal Single Point of Contact (SPoC) from Forge's team. This SPoC will rigorously review whether the innovator aligns with the principles of Defining the Right Product, Building the Right Product, and Building the Product Right, and with the planned Work Breakdown Structure.</p> <p><b>Financial Due Diligence</b></p> <p>Financial due diligence is reviewed from the perspective</p>



Partner Incubator	Response to Questionnaire
	<p>of Budget Viability Risk, Budget Diligence Risk, Product Viability Risk, and Capacity &amp; Competencies Risk. This review is conducted in comparison with the Financial guidelines defined under the SPARK Agreement. The assessment remarks are then shared with the Nodal Officer (NO) and DIO for their review. The innovator team is then guided to refine their proposal accordingly.</p> <p><b>Ongoing Monitoring</b></p> <p>The procedures described above are repeated periodically during the progress review of each milestone. This is achieved through the timely collection of Milestone completion reports and Utilization certificates from the startups.</p>

**Question 5. Strengthening the Ecosystem:**

Partner Incubator	Response to Questionnaire
ITIC, IIT Hyderabad	<p>(a) Accelerator programs or incubation initiatives: iDEX-DIO Program and ABCD(Acclimatization Boot Camp for Defence) Startups in collaboration with College of Defence Management, Hyderabad.</p> <p>(b) Promote defence innovations among students and researchers: We promote through our various outreach events, roadshows,</p>

Partner Incubator	Response to Questionnaire
	<p>hackathons, networking events and other program driven events.</p> <p>(c) Network of experts and business mentors: We have a pool of more than 150 experts from multiple domains (entrepreneurship, product development, fundraising, financial planning, company building &amp; scaling, IP Ownership &amp; Protection, business operations etc.) from both technological and business domains who share their valuable time in mentoring the entrepreneurs when we approach them.</p>
FITT, IIT Delhi	<p>We run accelerator program not specifically for defence. It is sector agnostic, we run that program and we take around 10 to 12 startups every year in that accelerator program. But in the accelerator program we have teams which are high end but in incubation, we have teams which are prototype stage. It is sector agnostic, so we can have Startups which are working in defence, cybersecurity and all other fields. So the mentors that we provide to them, we do master classes with them. We also help them depending upon their stage, whether a Technical Support or a business support they require or even accelerator, in they need more connections on generating the client orders, generating pipelines, or industry connect and we connect more into go to market and more towards raising funds. So we provide a lot of investor connects also at that stage. So depending upon this stage</p>

Partner Incubator	Response to Questionnaire
	<p>we have different programs and different strategy to execute it.</p> <p>Spreading defence more on students, so through this iDEX program, we do lot of outreach programs at every challenge when it is launched. so it is being spread amongst all the, I would say northern side which is our area covering UP, Punjab, Haryana, Delhi, Jaipur, Rajasthan. So we do outreach programs so that we can spread it among the most of the universities. And they also come to know that, there is an iDEX challenge and all. And I think by doing this lot of our faculties have also now connected and they have won iDEX challenges also.</p> <p>In our mentor pool, we have 20+ technical mentor who are proactively involved helping startup in iDEX excluding complete IIT faculty who can help anytime. In Business we have a pool of 40+ depending on the requirement it may be finance, investment, or marketing we provide them those connect.</p>
SINE, IIT Bombay	<p>(a) So specifically for defense, we have done couple of investor meets for the startups specifically focused on defense startups. We do the outreach program, we try to embed some elements which are relevant to the defence so last time we had a session on say, what are the military grade standards? And where to do the testing. There are various theme based sessions and various mentoring sessions which we are providing to the</p>

Partner Incubator	Response to Questionnaire
	<p>startups. Because we are a incubation center, we deal with the early stage startup. So mainly our boot camp or our programs are for the early stage startups. So these startups which are typically part of this iDEX program may not be relevant for them, we have some. Companies which are working in drone, space tech technology, propulsion engines etc. So they are right now not iDEX companies or IDEX grantees, but we believe that at some point of time they will be able to apply for iDEX program and we do conduct the boot camp for them. So one of our boot camp is currently going on where two of our companies are from defence related domain. Where we are making them ready to apply for that program, but currently the for the iDEX grantees, it's more or less the the need is funding support. So where we need the investor connects and all that, not the accelerator program as such.</p> <p>(b) We do conduct defense innovation among the students and researchers. Specifically, if I talk about IIT Bombay, we do conduct sessions for the specific research group. The faculty members, the researchers of IIT Bombay, we make them aware that this could be the potential use case for defence. So this is actually a very proactive approach. we are involving them as a technical mentor. They are also aware about this kind of a</p>

Partner Incubator	Response to Questionnaire
	<p>program exists and We are closely working with the faculty. They are applying for the program they are applying for the iDEX challenge. They do attend our outreach sessions. They do support the startup. They themselves also are applying for this iDEX challenges.</p> <p>(c) We have 200+ business mentors and experts. we have the experts in technical domain including the faculty members of IIT Bombay. we have business mentors in terms of Investor. we also collaborate with various corporates where this corporate business heads becomes our mentor. Like Maruti Suzuki, Mahindra Logistics etc. Our startups apply for their programs and they are mentored. Then we have individual mentors also who come forward. Our strength is the strong mentorship by alumni of IIT Bombay. Further, since set of SINE in 2004, the alumni of SINE also support start-ups. The alumni of SINE provide first hand experience and share their experience and that how the start ups get benefited. We have collaboration with International institution in manufacturing field. For example, with Industrial Technology Research Institute (ITRI), Taiwan also which specifically deals with space technology. We could send one of startup for a week long mentorship programme with ITRI. The start up has got benefitted in the field of Space technology by this</p>

Partner Incubator	Response to Questionnaire
	program.
Forge, Coimbatore	<p>(a) What accelerator programs or incubation initiatives do you run to support defence startups?</p> <p>Forge possesses a strong network of mentors/experts, investors, and industry partners, enabling us to provide comprehensive support to startups throughout their growth journey. Forge through its Deep Tech Acceleration+Fund program supports startups with the following value-added services/resources:</p> <ul style="list-style-type: none"> <li>(i) Funding support in the form of Grants and Seed investments for MVP Development, Product Testing Product Compliance, Commercialisation and Scaling GTM;</li> <li>(ii) Investor Connect &amp; Pathways to raise catalytic capital to scale their tech ventures;</li> <li>(iii) Strategic Partnerships with DPSUs, OEs, Manufacturing companies, MSMEs, for Tech Industrialisation, Industrial Production, Product Commercialisation, Systems Integration, and Defence Exports;</li> <li>(iv) Infrastructure &amp; Resources for Product Design, Development, and Pilot Manufacturing;</li> <li>(v) Expert Mentoring to achieve execution excellence</li> </ul>

Partner Incubator	Response to Questionnaire
	<p>by overcoming challenges with highly specialised/specific guidance on strategic decisions crucial for founders to achieve accelerated business and venture success;</p> <p>(vi) Strategic Advisory &amp; Consulting to offer programmatic interventions in the areas of Product Advisory, Venture Strategies, Business and Financial Plan, Fundraising &amp; Investment Advisory;</p> <p>(b) How do you promote defence innovations among students and researchers in academia?</p> <p>Forge takes a multipronged approach to achieving this goal</p> <p>(i) Academic Partners including professors, researchers and student innovators are constantly engaged through the DISC outreach programs and startup showcase events organized by Forge.</p> <p>(ii) Through the Graduate Innovation Engineer Certification program that is run by Forge in partnership with Academic partners. The program delivers comprehensive training across seven key areas, seamlessly integrated with an innovation-centric approach to engineering education. During this program, students of final and pre-final year attending the program</p>

Partner Incubator	Response to Questionnaire
	<p>are motivated to work on iDEX challenges and other defence, and securities challenges.</p> <p>(iii) These Graduate Innovation engineers are also enabled with opportunities to work with Defence Startups as interns during and post the program.</p> <p>(iv) Academic professors, researchers and innovators are also encouraged to engage with Defence startups to take up technology-sponsored projects designed, managed and monitored by Forge.</p> <p>(c) Describe your network of experts and business mentors for the purpose of initiating business for the start-ups or scaling up business of start-ups/MSMEs.</p> <p>Forge has 125+ empanelled mentors associated with who extend their support towards mentoring and nurturing startups in alignment with our vision through scheduled office hours. Startups are connected with relevant mentors based on the support they need. These mentors are recognized and enlisted according to their expertise in Defence &amp; Aerospace, Space, Cybersecurity, Tech/Product Management, Electronics and Embedded systems, Advanced Manufacturing, AI/ML, Assistive Technology, Digital Health Tech, Digital/IoT/Robotics, Climate</p>



Partner Incubator	Response to Questionnaire
	<p>Change, Sustainability, Business Startegy, Finance &amp; Investment, Legal &amp; IP, Sales, Marketing &amp; Business development.</p> <p>25+/125+ of these mentors are from Defence, Aerospace, space and securities field of expertise.</p>

**Question 6. Collaboration and Outreach:**

Partner Incubator	Response to Questionnaire
ITIC, IIT Hyderabad	<p>(a) We participate on regular basis in iDEX-DIO's outreach and promotional activities.</p> <p>(b) Yes we have engaged in Defence India Startup Challenges, Open Challenges, or Prime Challenges.</p> <p>(c) We interact with DIO and nodal agencies on weekly or as per the project progress of the startups.</p> <p>(d) Yes, we been able to achieve the expected outcomes as per the guidelines of iDEX-DIO.</p>
FITT	<p>(a) We do Outreach for each challenge launched. For whatever stipulated min requirement we try to cover maximum of it. We interact with DIO not exactly with anyone particular but many of the concerned DIO representative on every day basis we do other outreach programs other than idex challenges such as investor showcase, for example we had defexpo last year, wherein we called start ups from all PIs all over the country and</p>

Partner Incubator	Response to Questionnaire
	<p>invited twenty investors we had ADB, Gen Mann as the chief guest, such showcase creates ecosystem and gives awareness associated with defence, it gives attraction to start ups in terms of fund raising and meeting with defence officials available easily at one place.</p>
SINE, IIT Bombay	<p>(b) Every time there is a call for application, we do conduct at least two outreach session. One is virtual and one is typically physical. we do entire social media, emailers, everything for outreach and promotional activities of iDEX.</p> <p>(c) We are involved in all types of iDEX challenges, open challenge, prime challenges. We are the partner incubator since the inception of the iDEX program in 2018.</p> <p>(d) The interaction is very often with the startups, grantees, outreach. And then there could be HPSC nominations they need from our side. But interactions with nodal agencies is not much. Whenever there is a particular requirement we do interact with nodal agency.</p> <p>(e) Expected outcomes as per the guidelines, we do try to match all these expectations but we can do much better. The outreach to Tier 2 tier 3 cities is still not there. Whatever we can gather maximum from the IIT ecosystem and near and about Mumbai. But more potential can be grabbed from the Internal</p>

Partner Incubator	Response to Questionnaire
	<p>parts of the country. We are confined to Maharashtra only but the penetration into Tier 2 tier 3 cities probably is lagging somewhere. We do have engineering clusters in various cities of Maharashtra. In last two years, we have been doing the outreach more in Pune area and we have got various number of startups or MSME's from Pune because Pune is a engineering hub and we have lot of startups or MSME are working with defence. Similarly there is a Nashik engineering clusters. similarly there is Marathwada engineering clusters. So all these clusters need to be tapped as there are lot of MSMEs who are not aware about what this program is all about.</p>
Forge, Coimbatore	<p>(a) How actively do you participate in iDEX-DIO's outreach and promotional activities?</p> <p>Forge actively participates in and drives outreach efforts to expand program awareness within the startup ecosystem. Every outreach program they organize focuses on value-added initiatives for participants. These initiatives include:</p> <p><b>Expert Panels:</b> Participants have the opportunity to hear from veterans, defense experts, and winners of iDEX challenges.</p> <p><b>Interactive Q&amp;A Sessions:</b> Forge encourages</p>

Partner Incubator	Response to Questionnaire
	<p>participants to engage with the invited speakers through dedicated Q&amp;A sessions, allowing them to ask questions and gain valuable insights.</p> <p><b>Technical Debrief Sessions:</b> To further empower participants, Forge arranges dedicated technical debrief sessions. These sessions enable participants to clarify their doubts and receive guidance on crafting strong proposals for DISC challenges.</p> <p><b>Social Media Campaigns:</b> Run exhaustive and educative social media campaigns enabling participant engagement to drive the increase in number of applications</p> <p><b>Expert Advisory Calls:</b> Dedicated team of Forge employees rigorously support Prospective applicants by reviewing their applications for compliance, comprehensiveness, completeness and alignment to DISC challenges.</p> <p>(b) Have you engaged in Defence India Startup Challenges, Open Challenges, or Prime Challenges?</p> <p><b>Forge's Pioneering Role in iDEX</b></p> <p>Forge has been a founding partner of iDEX since its inception in 2018. Until DISC 4 and OC 2.0, Forge played a pivotal role, essentially acting as the de facto</p>

Partner Incubator	Response to Questionnaire
	<p>Defense Innovation Organisation (DIO). Their responsibilities encompassed:</p> <p><b>Challenge Curation:</b> Curating and defining challenge statements for innovators.</p> <p><b>Launch of DISC:</b> Launching the Defence Innovation Startup Challenge (DISC).</p> <p><b>Outreach Activities:</b> Undertaking outreach activities to raise awareness among potential startups.</p> <p><b>Nodal Agency Coordination:</b> Coordinating with the Nodal Agency (NA) to provide clarifications to innovators.</p> <p><b>Proposal Evaluation:</b> Evaluating proposals submitted by startups.</p> <p><b>Conduct of HPSCs:</b> Conducting High Powered Selection Committees (HPSC) to assess proposals.</p> <p><b>Winner Selection and Agreement Signing:</b> Selecting winners and facilitating the signing of agreements.</p> <p><b>Progress Monitoring:</b> Monitoring the progress of product development by selected startups.</p> <p>(c) How often do you interact with DIO and nodal agencies and what are the regular occasions of interaction?</p> <p>We engage with DIO officials regularly for the following:</p>

Partner Incubator	Response to Questionnaire
	<p>(i) <b>Outreach Program Planning and Execution:</b> Forge interacts with DIO to plan and execute outreach programs to expand program awareness within the startup ecosystem.</p> <p>(ii) <b>DISC Challenge Selection:</b> Forge collaborates with DIO in reviewing and selecting DISC challenges to be hosted on the platform.</p> <p>(iii) <b>SPARK Agreement Due Diligence:</b> Forge works closely with DIO officials during the due diligence process before finalizing SPARK agreements with winners of new DISC editions.</p> <p>(iv) <b>Open Challenge Application Evaluation:</b> Forge works jointly with DIO to evaluate applications received through Open Challenges.</p> <p>(v) <b>Conflict Resolution:</b> Forge and DIO collaborate to address challenges faced by startups during project execution or regarding Nodal Officer allotments for specific projects.</p> <p>(vi) <b>Mentorship/Guidance</b> - Enabling startups with the voice &amp; views of users during the product development process.</p> <p>(d) Have you been able to achieve the expected outcomes as</p>

Partner Incubator	Response to Questionnaire
	<p>per the guidelines of iDEX-DIO for PIs.</p> <p>Yes, we have been able to achieve expected outcomes as per iDEX-DIO guidelines for PIs.</p>

**Question 7. Prototyping and Piloting Support:**

Partner Incubator	Response to Questionnaire
ITIC, IIT Hyderabad	<p>(a) Assist startups/MSMEs in prototyping and piloting: Supporting through our inhouse incubator lab facilities or IIT Hyderabad facilities or outsourcing (if not available).</p> <p>(b) Network of experts and mentors: With a mentor pool of more than 150 experts from various domains (entrepreneurship, product development, fundraising, financial planning, company building &amp; scaling, IP Ownership &amp; Protection, business operations etc.) curating the support for both technological and business areas, the experts are reachable for sharing their valuable time in mentoring the entrepreneurs when approached.</p> <p>(c) Provide assistance in Patenting: Connecting the startups with the pool of IP facilitators in our network.</p>
FITT, IIT Delhi	<p>Prototyping and product development we provide the lab facility of IIT Delhi and Fab lab available at R&amp; I Park(electronics and mechanical). Different lab facility like laser cutting, 3D printing etc is available.</p>

Partner Incubator	Response to Questionnaire
	<p>We have a separate technology transfer office and a separate team for it. If any start-up needs any guidance in filing patent, both domestic or international, all that support is provided at a very low cost.</p>
SINE, IIT Bombay	<p>(a) We at SINE, do have our own labs, such as prototyping lab, mechanical lab, electronics lab, bio lab. Beyond that, there are startups who are using the IIT Bombay facility. We try to connect them with the faculty members for using the lab facilities and many startups are using the lab facility.</p> <p>We do have connects with the other lab or prototyping facilities or that kind of facilities.</p> <p>we do have patent attorneys on our pool of experts we don't do anything in terms of patenting for the startups, but we do connect them with the patenting attorneys and we do conduct regular focus sessions, one-on-one sessions, on patenting. Physical sessions are planned which give guidance on patenting how it can be monetized, These kind of regular sessions we conduct are called as "IP clinic".</p>
Forge, Coimbatore	<p>(a) How do you assist startups/MSMEs in prototyping and piloting their defence-related products?</p> <p>Forge is a vertically integrated Incubation space with 3</p>



Partner Incubator	Response to Questionnaire
	<p>established centers encompassing Innovation labs, shared office facilities, event space, conference rooms etc. The 3 established centers are situated at Coimbatore, Hosur &amp; Chennai. Technology innovation labs situated at these locations are all MIT Accredited Digital Fabrication Lab offering digital manufacturing technology through industrial-grade fabrication and flexible computer controlled tools. Each of the 3 centres in Coimbatore, Chennai and Hosur, can concurrently support the industrial-grade prototyping of 12-15 product innovations while being able to serve the needs of 25-30 startups simultaneously. Each centre has the room to expand concurrent capacity to an additional 10-15 product innovations and 20-25 startups.</p> <p>As part of PI offerings these facilities are all accessible to our portfolio startups. In addition to these facilities, Forge offers in-house technical experts and practitioners who provide invaluable guidance and support to startups throughout the prototype and product development process. This ensures our portfolio startups have access to the resources and expertise they need to succeed.</p> <p>(b) Describe your network of experts and mentors for this purpose.</p> <p>A combined answer is provided in Part 'c' of Strengthening the</p>

Partner Incubator	Response to Questionnaire
	<p>Ecosystem</p> <p>(c) To what extent do you provide assistance in Patenting the start-up/MSMEs innovative product</p> <p>We help the startup explore patenting feasibility and opportunities individually and then enable them with connects of Legal/IP consultants and experts for further evaluation, drafting, and filing process.</p>

**Question 8. Policy Adequacy and Recommendations:**

Partner Incubator	Response to Questionnaire
ITIC, IIT Hyderabad	<p>(a) Yes, policy framework is adequate but always there is scope of improvement in any program.</p> <p>(b) For improvement in better performance of iDEX scheme, Hold multiple sessions with partner incubators to help them comprehend the programs.</p> <p>© To minimize delay in projects or termination of projects mid way: More interactions with the nodal agencies to look into the technical challenges, monitor the progress and address them at the nascent stage. (d) No change in policy pertaining to funds/grants or the deadline for project completion.</p> <p>(e) No categorization of projects based on their complexity and</p>

Partner Incubator	Response to Questionnaire
	<p>variation in its clauses.</p> <p>(f) The iDEX policy for incubators almost the same from policies from schemes of other Ministries.</p> <p>(g) No recommendations for any of the policy clauses on incubators of other Government Ministries to be incorporated in iDEX policy.</p>
FITT, IIT Delhi	<p>The major point is about the matching grant looking from start up sometime is a challenge, may be not for MSME. iDEX-DIO is working on this issue.</p> <p>Once the Challenge is selected and the start up visits and meets the end user, sometimes it happens that the problem statement and solution is very different and fund constraint or capability not able to</p> <p>Indigenous content should be well defined. Start up may be buying item from Indian company but that company in turn may be purchasing from abroad and that is an issue.</p> <p>Amongst start ups and MSME who are iDEX winners almost 80%-90% are virtual, and incubation for them is not mandatory.</p> <p>When iDEX selects the team as iDEX winner, its start ups choice to select PI, even PI and their committee has the choice to select or reject the start up for incubation. So in virtual mode, monitoring on day to day basis is a challenge and Monitoring is</p>

Partner Incubator	Response to Questionnaire
	<p>limited largely during review only. If a start up is physically incubated and working on daily basis and meeting PI regularly then it is an ideal condition but same is not possible with a virtual iDEX winner but kind of complex problem statement which are received in iDEX challenge, may need MSME to apply but MSME may not opt for incubation in a different location and thus choose to be on virtual mode.</p> <p>The fund amount and the framework of other Ministries is totally different from that of iDEX policy. In other ministries scheme, the funding is a mix of grant, Equity and Debt and there is no concept of Matching Contribution from the start Up, whereas in iDEX policy the grant value is quite high but there is MC concept.</p> <p>No mix and match of policy clauses is possible, these are two completely different framework and can be followed only in totality .</p>
SINE, IIT Bombay	<p>There should be a kind of centralized or central repository of the resources. So suppose being in IIT Bombay, we have at least a technical expert for almost all domains. but in some other incubation center, they may not have the technical expert in specific domain, or even we may not have IIT. IIT, Chennai have marine engineering domain whereas we don't have marine</p>

Partner Incubator	Response to Questionnaire
	<p>engineering. So anything related to specifically on marine probably we donot have the experts.. Suppose 22 problem statements are launched by DIO, So in that case, you identify the experts in the beginning itself or once you note the problem statement that these are the 22 domains each 22, each domain will have two to three experts from various academic or corporate. Suggestion is to bring together various people from different partner incubators or other agencies and give their access to the all the incubation centers. So rather than distribution of the efforts, it is better to centralize it Based on the field likely to be chosen for the DISC, experts can be sought from PIs. The expert will remain in touch with the project from very start date. Nodal agency can be made aware that there is a technical expert who can give the guidance. it could be a more collaborative efforts. And similar model can be made for financial aspect also. The financial expert can be selected from DIO pool. All CAs need not know the nitty gritty of the scheme. The information of pool creaed can be made available on iDEX portal.</p>
Forge, Coimbatore	<p>(a) Do you believe that the current iDEX policy framework is adequate to achieve the intended results?</p> <p>iDEX (Innovations for Defence Excellence) policy framework in</p>

Partner Incubator	Response to Questionnaire
	<p>India aimed to foster innovation and indigenization in the defense sector by engaging with startups, MSMEs, and academia. Where the current framework is adequate to achieve its intended results however it depends on various factors, including its implementation, effectiveness in promoting innovation, collaboration between stakeholders, and adaptability to changing circumstances. These factors are taken into consideration over a period of time and are being implemented.</p> <p>(b) What improvements or modifications would you recommend for better performance of iDEX scheme?</p> <p>To enhance the performance of the iDEX scheme and further promote innovation and indigenization in the defense sector, several improvements and modifications could be considered:</p> <p>Inclusion of certification requirements as part PDS/PRUs as an overarching requirement at M0 and well defined by Milestone 2 stage from Certification agencies such as DGQA/DGAQA/CEMILAC may be beneficial for improving easier adoption &amp; procurement by stage of SSCT.</p> <p>Promotion of Export Opportunities such as INDUSX with other friendly nations</p> <p>Categorizing Open Challenges based on Prime, ADITI, and</p>

Partner Incubator	Response to Questionnaire
	<p>DISC has the potential to improve efficiency and attract more targeted startups. However, careful planning and a phased approach are necessary to minimize administrative burden and ensure a smooth transition. Evaluating the effectiveness of a pilot program can be instrumental in determining the long-term viability of this approach.</p> <p>(c) What changes need to be brought about to minimize delay in projects or termination of projects mid way?</p> <ul style="list-style-type: none"> <li>• Clearly defining the PDS/PRUs &amp; Project Scope and Objectives as early as during Milestone 0 and 1</li> <li>• Nodal Officers and PIs can work together to proactively identify and mitigate risks related to technical progress, PMA adherence, WBS execution, milestone achievement, and implementation plans.</li> <li>• Continuous Evaluation and Improvement in Product Development by the Product Manager (Nodal Officer)</li> <li>• Time taken for Audit cycles need to be extremely minimized as they add a ripple effect to cascading delays when stretched too much in clarifications process</li> <li>• Nomination of Nodal Officer and his continuity during the development phase need to be ensured by NA</li> </ul>

Partner Incubator	Response to Questionnaire
	<p>(d) Should the policy pertaining to funds/grants or the deadline for project completion be altered in any way?</p> <p>No, the present policy is adequately addressing the same and hence alteration or changes not recommended at this point in time.</p> <p>(e) Do you recommend iDEX policy to categorize projects based on their complexity and accordingly have variation in its clauses?</p> <p>It would be very complex to implement this at individual project levels. But categorisation is necessary depending on the complexity of the expected innovation and must be done during evaluation of challenges before hosting and call for applications.</p> <p>(f) How is the iDEX policy for incubators different from policies from schemes of other Ministries?</p> <ul style="list-style-type: none"> <li>• iDEX being Sector focused towards fostering Defence Innovation for technology &amp; product development helps in strengthening PI portfolio.</li> <li>• The effective implementation of Product Management Approach vs. just Grant Management Approach taken by other</li> </ul>



Partner Incubator	Response to Questionnaire
	<p>schemes enables relatively higher success rate of successful tech/product development. This also enables development of internal capabilities of Incubator resources to learn and grow to be product managers rather than being operational in their activities of project monitoring and management .</p> <ul style="list-style-type: none"> <li>• Provides opportunity for PI in terms of skill, capacity and capability building of internal resource through involvement in the Co-creation opportunity along with startups &amp; Nodal Agencies/Nodal Officers’.</li> <li>• The path to procurement objective of iDEX and the case for dual use assessment enables PIs to influence institutional &amp; strategic investors to focus on investing in Defence tech startups and ventures.</li> </ul> <p>(g) Do you recommend any of the policy clauses on incubators of other Government Ministries to be incorporated in iDEX policy?</p> <ul style="list-style-type: none"> <li>• Listing of Veterans on DIO website for mentorship support /advisory.</li> <li>• Expansion of availability of Subject Matter Experts (SME) pool for offering advisory programs</li> </ul>

**Question 9. Way Ahead:**

Partner Incubator	Response to Questionnaire
ITIC, IIT Hyderabad	<p>To increase the collaboration</p> <ol style="list-style-type: none"> <li>1. Clear Communication channels to ensures that both parties are wellinformed about each other's progress.</li> <li>2. Regular Meetings to facilitate discussions, share updates, exchange ideas, and address any challenges or concerns.</li> <li>3. Tailored Support that caters to the specific needs and objectives of partner incubators.</li> </ol> <p>To boost innovation</p> <ol style="list-style-type: none"> <li>1. More involvement into Research and Development with collaboration of more private sector partnerships.</li> <li>2. Encourage openness and collaboration by establishing platforms for sharing ideas, technologies, and best practices across the defense industry with other stake holders.</li> <li>3. Improvise the Procurement Processes for the startups/MSMEs who have proved the technology readiness for any challenge, so that it is quick and saves time for both defence and the startups/MSMEs.</li> </ol>
FITT, IIT Delhi	<p>(a) Collaboration: The ecosystem of iDEX have many stakeholders and therefore the projects get delayed invariably. At each milestones, Start ups and Nodal agencies are in touch and at times may even clear the milestone without involvement of the PI. However, if the technical review is to be taken, it involves</p>

Partner Incubator	Response to Questionnaire
	<p>finite time. At times, the nodal agencies insist on the review of the PI.</p> <p>(b) Any reduction in Matching Contribution from the Start-Ups would help boosting the innovation in defence sector.</p> <p>Start-Ups face difficulty in finding the investor for their part of matching contribution. iDEX-DIO is in talks with SDBI to provide funds to Start-Ups through FITT. Small Industries Development Bank of India (SIDBI) acts as the principal financial institution for promotion, financing and development of the Micro, Small And Medium Enterprise (MSME) Sector as well as for co-ordination of functions of institutions engaged in similar activities. Acceptance of SIDBI as an Investor for Start-Ups engaged in iDEX schemes would help the Start Ups in big way to raise funds for their projects.</p>
Forge, Coimbatore	<p>(a) How can collaboration of iDEX-DIO with partner incubators be enhanced?</p> <p>Enhancing the collaboration between iDEX-DIO (iDEX Defence Innovation Organisation) and partner incubators can significantly benefit defense startups and MSMEs by providing them with access to resources, expertise, and opportunities for growth. Here are several ways to strengthen this collaboration:</p>

Partner Incubator	Response to Questionnaire
	<p><b>Capacity Building and Training:</b> Collaborate on capacity building and training programs to enhance the capabilities of startups and MSMEs supported by iDEX-DIO and partner incubators. This needs to be done to the Partner Incubators on a periodic basis.</p> <p><b>Industry Connect:</b> Facilitate market access and industry connect initiatives for startups through joint efforts between iDEX-DIO and partner incubators.</p> <p><b>Recognition and Incentives:</b> Recognizing and incentivizing well performing PIs in terms of number of projects handled, timely interventions &amp; closures and well managed Projects. Showcase of successful collaborations by highlighting exemplary case studies, providing awards or grants for impactful initiatives, and offering preferential access to funding or support for joint projects.</p> <p><b>Cross-Referral and Pipeline Management:</b> Establish mechanisms for cross-referral of startups between iDEX-DIO and partner incubators to ensure a seamless flow of innovation and talent.</p> <p>(b) What steps can be taken to further boost innovation in the</p>

Partner Incubator	Response to Questionnaire
	<p>defence sector?</p> <p>Enabling Strategic partnerships for IDEX Startups/MSMEs with DPSU's, established Defence Manufactures and OEs for Industrialisation of solutions/products built through iDEX must be initiated at an appropriate stage of the development or atleast at AoN stage the Production/Manufacturing Partner may be engaged/identified against particular project of the startup/MSMEs.</p> <p>With this end goal of productization and commercialisation of Defence tech solutions the solutions discovered and developed through DISC shall remain as projects and find it challenging to see the mainstream product cycles.</p>

**Question 10. Additional Comments:**

Partner Incubator	Response to Questionnaire
ITIC, IIT Hyderabad	<p>Over all the iDEX-DIO is a very good initiative. Due to the openness, the private entities have a chance to demonstrate the innovations and be part of India's development. The startups have shown remarkable progress in the projects assigned since the collaboration with iDEX and now they are at a good stage comparatively. We wish them all the best, hope their journey</p>

Partner Incubator	Response to Questionnaire
	continues.
FITT, IIT Delhi	Two success stories of our Incubator worth mentioning is CyranAI and Swadeshi, both the companies have bagged ordered post successful trial of the prototype products.
Forge, Coimbatore	<p>Any other insights, challenges, or success stories you'd like to share?</p> <p>Incorporation of a Fund corpus for investment in Startup/MSMEs in form of seed investments similar to DST - NIDHI Seed Support Scheme, Startup India Seed Fund Scheme, Meity TIDE Scheme etc.</p> <p>SmartProcure Policy implemented by Smart Cities Mission through the City Innovation Exchange, has some best practices in terms of providing Pilot Procurements to test the solution from Startups and small companies prior to the implementation of long-led RFP cycles. The policy helps Startups &amp; MSMEs to compete against the L1 bidders with innovative solutions which by definition do not have success stories of large scale procurement.</p> <p>Policy for promoting Strategic Partnerships along with DPSUs for investments, co-creation &amp; co-development of products, Engineering aggregation, Systems integration.</p>

#### 4.3 **Outreach Programmes**

All the Partner Incubators are running their outreach programmes to make the start ups aware about the DISC launches and inspire them to apply for these challenges.

#### 4.4 **Accelerator Programmes**

The accelerator programmes are regularly conducted for all start ups to apprise them about the financial aspects and investment options.

#### 4.5 **Interactions with Stakeholders**

Regular interactions are conducted by PIs with iDEX-DIO to resolve day to day issues of the start ups.

#### 4.6 **Type of Incubatees**

The incubatees can be resident with the PI or be connected virtually. Therefore, the virtual incubatee do get limited mentoring based on the projected requirement.

#### 4.7 **Response of Start-Ups and MSMEs on Questionnaire**

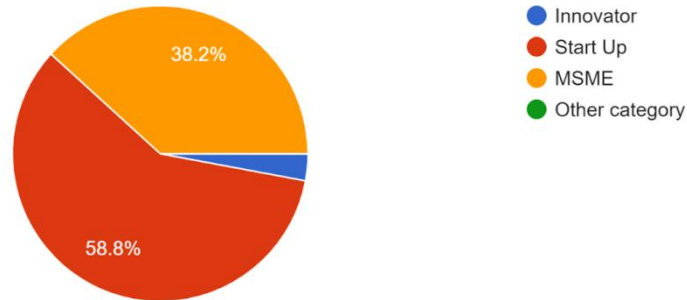
A questionnaire was given to the iDEX winners from DISC 1 to DISC 8(Winners declared upto End Aug 23 were only considered). Questionnaire was sought from more than 150 companies, and 35 companies responded which is approximately 10% of total iDEX winners.

#### 4.7.1 Break up of Responders.

Out of the response received majority were start ups and balance MSMEs with one responder being individual innovator.

##### 1. Classification of your company?

34 responses



**Figure 5. Breakup of Responders**

#### 4.7.2 Name of the responder's Company

The data was obtained from the responders. The request for filling up of questionnaire was sent to more than 150 companies. However, the response was received from companies for which the contact details of Owner/Co-owner was available, either through Navy source or by interaction during forums such as DefConnect/Swavlamban. It was observed that Start-Ups and MSMEs when approached individually were very accommodative and responded quickly to the questionnaire.



### **4.7.3 Year of Formation of the Company**

Out of 35 responders, 21 responders are Start Ups and their companies have been formed during the period 2016-2023. Company of one individual innovator amongst the responder was formed in 2023. Balance of 13 responders are MSMEs, out of which only two MSME companies were formed during the period 2017-2023 and rest were varying from 1990 to 2016. It is evident from the data that the boost given by the Government on Start Ups in last few years has resulted in many Start Ups to form and participate in new schemes.

### **4.7.4 Responders as iDEX Winners**

The questionnaire was designed for mainly iDEX winners to ensure that the feedback on PI is received based on their experience with PI. Only one response was received from a non-iDEX winner which has not been considered in the research.

### **4.7.5 PIs linked with Responders**

The data received from 35 responders indicate that that 11 PIs were associated with the responders. The PIs included, FITT, SINE, CIIE IIMA, T hub, NIT Calicut, maker village, mach33aero, IIT H, Forge, KIIT TBI, and IIT K.

### **4.7.6 Types of Technical Support Sought by Companies**

The Start-Ups and MSMEs are to be given technical support by PI. The responders were asked the type of technical support was sought from their

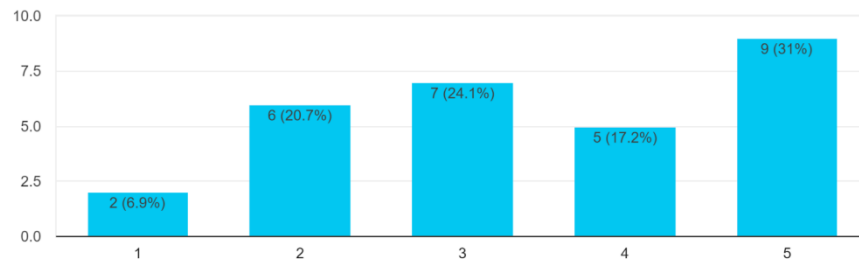
respective PI. The various technical support sought by the companies included Mentorship of specific Professor of IIT, Interns and system design audit, Subject matter expert from Maritime, Commercial AI perspective, EMI EMC guidance, Finding the right technical manufacturing partner, Design Flow Validation, Assistance in Finite Element Analysis, Lab & Infra, Pilot production, Support for tests and consulting from IIT professors, Help with MIL Standard Equipment.

#### 4.7.7 Rating of Technical Support from PIs.

The response with respect to support given on technical aspects has been mix variety. 31% have rated the support as excellent and majority has been from excellent to good.

8. How do you rate the technical support received from your Partner Incubators in progressing with development of the product?

29 responses



**Figure 6. Rating of Technical Support from PIs**

#### 4.7.8 Types of Business Support Sought by Companies

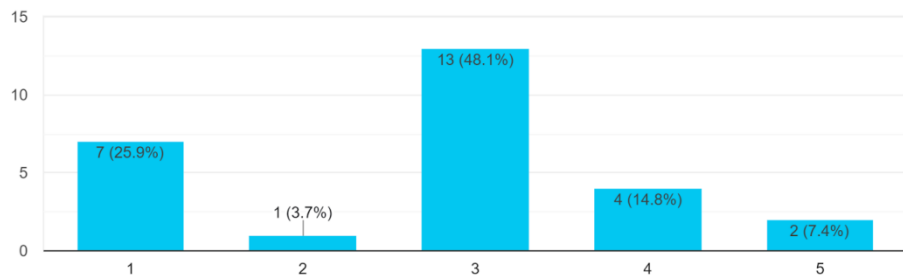
The Start-Ups and MSMEs are to be given Business support by PI. The responders were asked the type Business sought from their respective PI. The Business sought by the companies included Stage wise fund validation, Getting a

visibility on the MOQ, Dual use cases, and commercial applications, Investor identification, Project sign off, Closing of milestones, more connections & market reach, Funding, Connection to Buyers, Connecting Contacts, Review of documents and compliance to iDEX guidelines, Project Extension, Fundraising, Funding support, Assistance with book keeping for handling iDEX funds, HR and Finance functions along with Hiring functions

#### 4.7.9 Business Development Support.

Either many companies have not sought the business support or have not reached that stage of product development. However, out of the response received, the rating has been between Poor to Good. 48.1% respondents rated business development support as Good whereas 26% rated it as poor.

10. How to do rate the business development support received from Partner Incubators during product development stage and thereafter in scaling up the business?  
27 responses



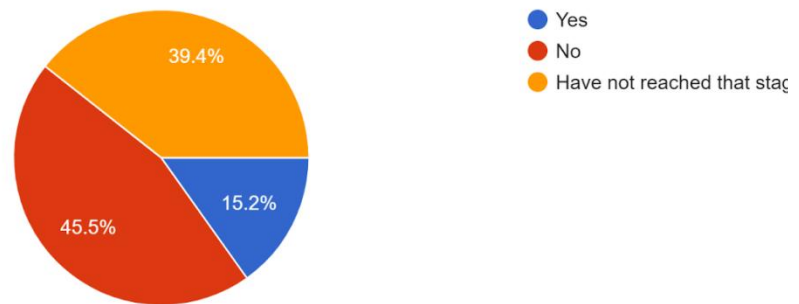
**Figure 7. Rating of Business Support**

#### 4.7.10 Provision of Testing Facility.

Approx. 85% respondents have had the experience of requirement of Testing. However, majority of the responders were not provided testing facility. This may be due to two reasons, either the facility was not available with the particular PI or the testing requirement could be field trials with exact condition of usage of product, which is generally liaised by the nodal agency.

11. Were you provided testing facility by PI

33 responses



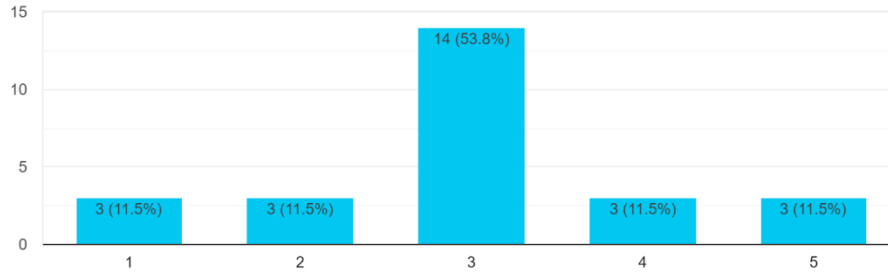
**Figure 8. Provision of Testing Facility**

#### 4.7.11 Rating of Testing Facility

53.8% of the respondents have indicated that the support given for testing was Good.

12. How do you rate the facility being provided by PI for testing your product during different stages of production?

26 responses



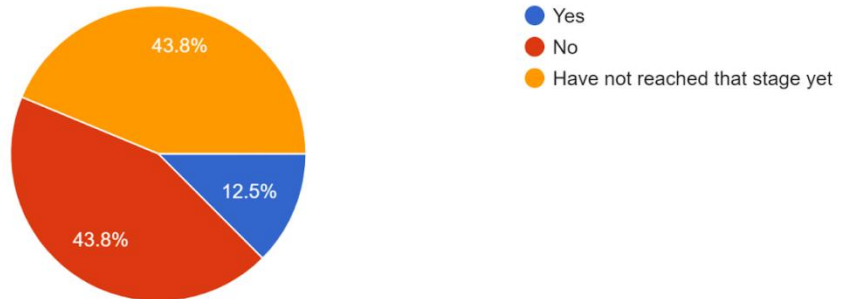
**Figure 9. Rating of Support for Testing**

**4.7.12 Guidance for Patent**

Amongst the respondents, 12.5% were provided with the guidance on Patenting, whereas 43.8% were not provided any help. Balance 43.8% respondents did not seek any such requirement. The PIs are not involved with regards to patenting support for start ups. They make the Start Ups aware about the process only and in best cases connect with the patent attorneys.

13. Were you provided guidance by PI on obtaining Patent on your product?

32 responses

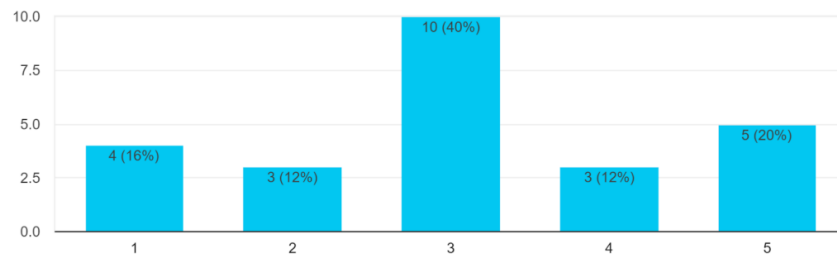


### Figure 10. Patent Support

#### 4.7.13 Rating of Patent Support

The satisfaction levels with respect to support provided for patenting has been Good. 40% respondents have rated the patent support by PI as Good, 20% as Excellent and 16% as Poor.

14. How do you rate your satisfaction levels with PIs in respect to patenting of your product  
25 responses

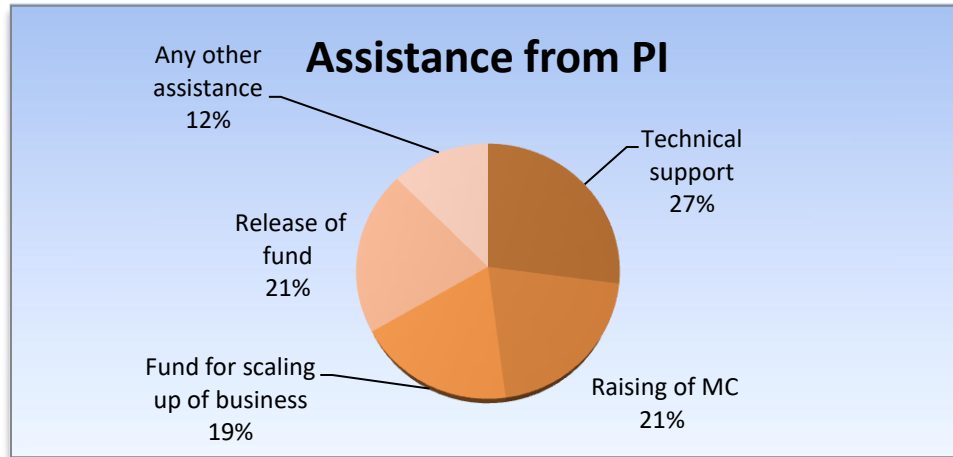


### Figure 11. Rating of Patent Support

#### 4.7.14 Assistance from PI

Based on the role of PIs and understanding the requirement of Start Ups and MSMEs post discussion with few of the Start Ups companies, the priority requirement of Start Ups/MSMEs was sought in the questionnaire. Out of the five different support expected from PI, technical support was the most common requirement of the Start ups. On case to case basis, other support such as Assistance for release of funds from DIO, Requirement of funds for scaling up of Business and Raising the ceiling amount of Matching Contribution, were also the priorities of the Start Ups & MSMEs. Other specific support sought included

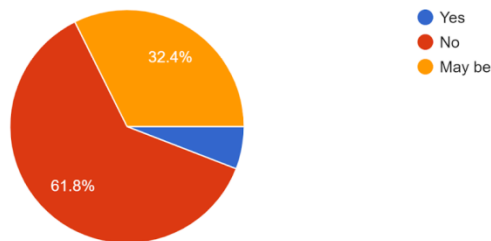
preparation of presentation, HR/Finance functional support, Other models of revenue sources, navigating the complex documentation process of iDEX, compliance of legal aspects.



**4.7.15 Satisfaction Levels with a PI**

Companies are mostly willing to continue with the same PI and not change to other PI for next iDEX project. Only 5.9% respondents have plans to shift to a different PI in the next project. It can be either due to unsatisfactory experience with the current PI or the company has chosed a different field(which is highly unlikely).

16. Once you have completed the iDEX project you are working on currently, would you like to change the PI in your next iDEX project?  
34 responses



## Figure 12. Satisfaction Level with a PI

### 4.7.16 DISC option

Companies are mostly keen to apply for all models of DISC. While 54.5% companies are keen to apply for all DISC models which is considered a good percentage, however, only 18.2% are keen to apply for open challenge, which needs to be studied further. Ideally maximum companies should be keen on applying for open challenge, only if use case for defence is understood.

17. In your opinion, under which DISC model, does a start up require PIs assistance the most?  
33 responses

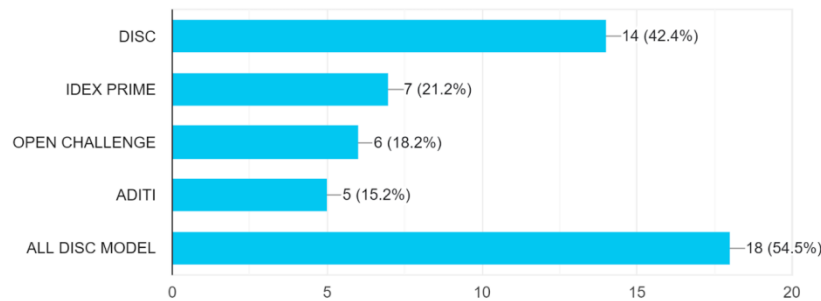


Figure 13. DISC Option

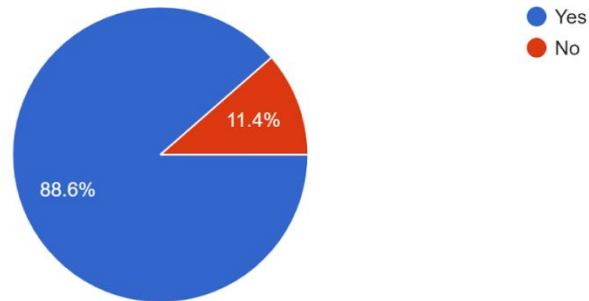
### 4.7.17 Choice of High Cost Projects

Majority responders have shown keenness to opt for high cost projects. Amongst the respondents, 59% are start-ups. The response indicate that start-ups are also ready to take the plunge for challenges with higher product development cost with matching contribution being provided by the start-up.



18. Are you keen on taking up challenges with higher product development cost?

35 responses



**Figure 14. High Cost Projects Preference**

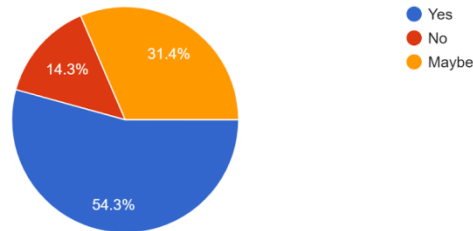
#### 4.7.18 Need for PI

Partner Incubators have been brought into the ecosystem of Defence innovation to take on as an interface with Start Ups/MSMEs and iDEX-DIO and monitor these companies and provide necessary mentoring which otherwise would have to be provided by iDEX-DIO. To the query on the need for PI, only 54.3% of respondents believe that the PIs are necessary in the iDEX ecosystem. 14.3% believe that PIs are not required and 31.4 % are not decided. The survey indicate that respondents believe that the ecosystem can work even without PIs and the incubators work is either redundant or it can be done by someone else. Frequent interactions are held by Start Ups/MSMEs with nodal agencies at every stage of the project. There are times when PI may not be engaged with the progress of the project. iDEX-DIO, also has taken initiative and has developed a rich pool of investors for help of start ups. At times, Start Up/MSME can also decide onto hiring of experts rather than involve with the PI. Additionally, as discovered

through discussions with Partner Incubators (PIs), it became evident that early-stage start-ups derive significant benefits from the incubation process. Schemes provided by institutions such as DST (Department of Science and Technology), MeitY (Ministry of Electronics and Information Technology), etc., facilitate the conversion of their ideas into prototypes without necessitating funding from the start-up's end. Consequently, start-ups applying for iDEX projects have typically progressed beyond the initial learning stage and possess awareness of the defense use case, potentially reducing their reliance on PI support compared to early-stage counterparts.

19. In your opinion, are Partner Incubators necessary in the ecosystem for innovation in Defence sector?

35 responses

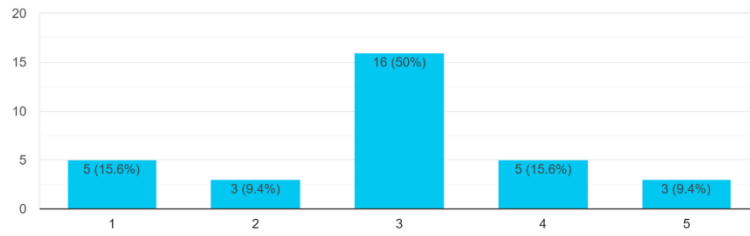


**Figure 15. Need for PI**

#### **4.7.19 PIs Performance in Problem Resolution**

Between the scale of 'Not affective at all' to 'Very effective' majority respondents have indicated an average rating for problem resolution. It is to be noted that 3 companies have rated it as very effective and 5 companies have rated it as Not affective at all.

20. To what extent, the PI/Pis have been successful in bringing the concerns of start ups/MSMEs to DIO/nodal agency(problem statement originator) and resolving them.  
32 responses

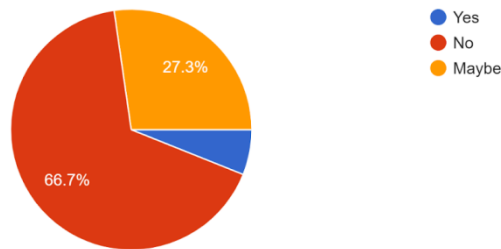


**Figure 16. Success Rating of PIs towards Interaction and Problem Resolution**

**4.7.20 Similarity of PIs**

Majority(66.7%) companies have agreed that all PIs are different in terms of capability. Therefore it is likely that each PI have their strengths and weeknesses. Start-ups who are not in knowhow of the PIs capabilities would not be able to do a correct selection. Area of expertise of each PI is available on iDEX website. Experienc/Feedback of start-ups/MSMEs can also be made available on the website for better selection of PI by each start-up/MSME.

21. The Incubators are selected to become partners with iDEX through eligibility criteria. In your opinion, can all the Partner Incubators(28 as on Fe...) with iDEX be equated same in terms of capability?  
33 responses

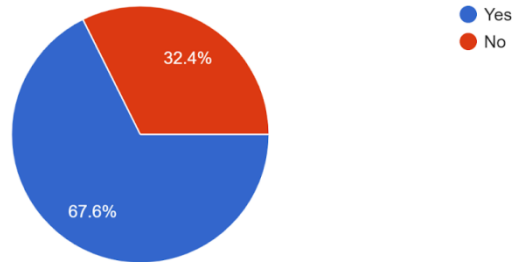


## Figure 17. Similarity of PIs

### 4.7.21 Need for Defence Incubator

67.6% respondents have opined the need for dedicated incubators for only defence related innovations.

22. The Incubators mentor the start ups in all fields including ones dealing with defence products. In your opinion, should there be Incubators dedicated to only defence related innovations?  
34 responses

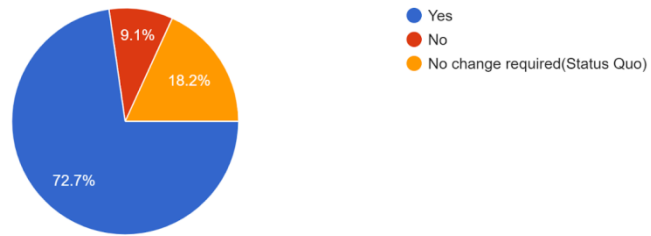


## Figure 18. Need for Defence Incubator

### 4.7.22 Need for Industry Incubators

The need for Industry incubators has been seen in the response of the respondents as 72.7% .have expressed choice of incubators from Private/Industry.

23. Presently DIO has onboarded PIs from academia as well as Private/Industry. Would you like to have more number of Incubators from Private/Industry?  
33 responses

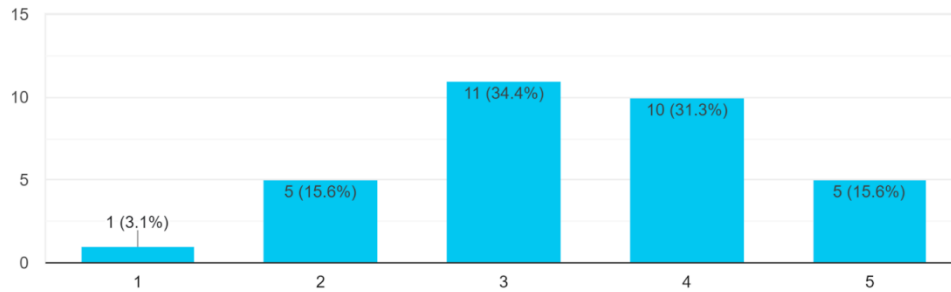


**Figure 19. Need for Industry Incubators**

**4.7.23 Rating in Scouting and Outreach Role of PIs**

The responders have rated PIs in their scouting and outreach role from Good to Excellent.

24. Partner Incubators are to conduct out reach programmes and scout for suitable start ups upon launch of any Start Up Challenge. In your opinion, to what extent, are the PIs able to meet this objective.  
32 responses



**Figure 20. Scouting and Outreach Role**

**4.7.24 Suggestions for policy improvement**

25. Which are the areas where you faced problems and did not have solution for it and believe that by some provision in policy may help in future

- (a) Sufficient Funds availability
- (b) Close and intense interactions with the nodal agency
- (c) MOQ
- (d) Having subject matter experts on board who can help in active conversations about the product being developed, so that it can reach the PO stage at the earliest.
- (e) Time bound processing and feedback to applicants of all challenges.
- (f) Use of expensive test equipment and labs for certification for mil grade or JSS-55555 should be made available through the PIs
- (g) Milestone 4 ... ours was a unique case and no one had any specific interpretation of the same.
- (h) support for certifications and testing
- (i) Matching funding; if policy change can be made to include government grants as matching funding that will definitely be a lot of help; otherwise many startups, as in the past, will be forced to give up on their brilliant ideas and the nation will suffer as well due to lack of funding. Some policy change is currently desperately needed in policies regarding matching funding.
- (j) Some of the PIs with college passout graduates are over bearing on senior research teams and misbehave
- (k) Not having a clarity on product definition
- (l) The market access and size of the order after completing the successful trials. There should be a clear policy on the order size. Also there are

many challenges published in DISC which require funding much higher than 25Cr. There is a need for DIO to consult industry before publishing the challenge.

- (m) Testing cost being charged by DRDO etc for our project is huge. cost should be waived off /borne by Govt for idex/startups must be given
- (n) After successful completion of SSCT of product being developed, it should be mandated that End User has to release the production order without any conditions.
- (o) Mainly facing issues with connecting people like co-ordinator, Nodal officer to make it fast processing. Always there is a delay for each and every steps and queries.
- (p) Documentation
- (q) Provide tentative Purchase Orders (PO) upon winning any challenge.
- (r) Clearly mentioning the acceptance criteria among multiple winners for same project (restrict winner to two, preferable have just one winner per project).
- (s) Change impractical expectations on product development life cycle.
- (t) Nodal officer from DPSUs must be the decision maker for a project they list.

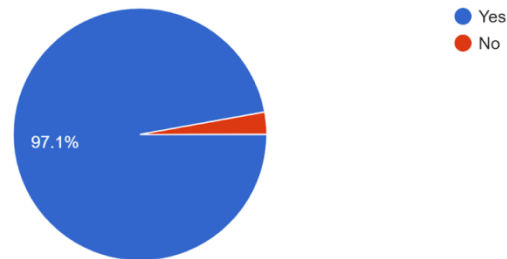
#### **4.7.25 Need for Minimum Order Quantity**

Majority respondents among the iDEX winners have expressed their requirement of MoQ during the challenge stage itself. In few of DISC, MoQ were given during

the challenge stage itself. As seen from the response, MoQ assurance would surely boost the number of start-ups/MSME applying for the challenges.

26. Do you believe that by giving the Minimum order Quantity (MoQ) assurance in the challenge itself will bring in applications from more companies.

35 responses



**Figure 21. Need for MoQ**

#### **4.7.26 Suggestions by Start-ups/MSMEs for Improvement**

27. Suggest recommendations for improvement in the iDEX ecosystem or policy with respect to any one or more of following aspects:-

- (a) Processes of PIs
- (b) Responsibilities of PIs
- (c) Criteria for selection of PI
- (d) Process of assigning startup with a particular PI
- (e) Objectives defined for PIs towards mentoring, Outreach etc.
- (f) Funding
- (g) Auditing
- (h) Any other aspect.

#### **Answers**

- (a) Reasonable and achievable clear deliverables.



- (b) Clear testing and approving plan initially itself , giving PDS to candidates initially itself to understand the full scope and cost accordingly ,
- (c) Atleast two winners for large projects like PRIME onwards to ensure success as well as competition ,
- (d) Good handholding by Nodal agencies
- (e) Timely funding x 4
- (f) Ease of releasing milestone payments
- (g) Minimum Order Quantity is a must to persuade new firms and startups to participate in IDEX challenges.
- (h) Objectives defined for PIs towards mentoring, Outreach etc. and Auditing
- (i) Requirements of PIs are not clear yet, atleast for Software based companies, where we dont even utilize any lab facilities. PIs should help in documentation, and being compliant to with the processes of iDEX. Mentoring support is generic as they dont have subject matter expert from defence with them. Giving mentorship on tech without the context of domain knowledge is more harming than helping.
- (j) Technical infrastructure at PI.
- (k) Funding through the PI and use of lab facilities for certifications through the PI
- (l) aspects related to c,d,e, and f, should be clearly defined and it will be good if the PI is geographically closer to incubatee,
- (m) My suggestion would be to select partner incubators that are large industry or at least have the requisite funds to support startups. The individual incubators

today in my opinion are trying to establish themselves and does not have the core execution capability

(n) a, b, d

(o) PI's should help startups raise some initial quantum of matching funds(keeping in mind that every PI has their internal funds as well)

(p) PI's should have dedicated personnels in legal, compliance, audit CA dept etc.. as most Start ups even some established businesses struggle with these things; also network requiremnet for procurement support and supply chain connectivity, dedicated testing facilities or right connect regarding the same.

(q) Fund raising support should be a priority without having the startup give equity and get incubated- as upon selection the PI is already benefitting from both parties and to withhold wholesome support unless the startup gives equity and becomes formally incubated should not be practised.

(r) iDEX handholding till milestone 3 should be there without matching contribution.

(s) Supply chain resolution as mil-grade components are not available in India and timeline is 4-6 weeks which causes delay in development and deployment.

(t) Innovators are always responsible and serious lot, who have risked crores of rupees to be part of Defence eco-system. PIs (who ultimately have nothing to lose) should not be a hurdle to innovators. On their own, innovators have won a challenge on self-skill and merit. Overbearing PIs are mostly looking at IPR sharing/inflicting high-handed approach with a sitting on a higher 'table & chair' attitude. Innovations in a field of deep-tech are themselves difficult, handholding

is the mantra. Mostly it is monitoring of senior PhD researchers with fresh graduates with local MBA degrees (who only chase dates and their seniors' bureaucracy). PIs should be headed by senior Professor Emeritus level people. But, Academia PIs are somewhere competitors of the innovators, as Professors themselves have Startups, and serious conflict of interests exist. Somewhere, PI organisations have been constituted in lines with concept of Controller of Defense Accounts, who may also provide technical support. This needs a serious re-look, if deep-tech innovations in Defence have to happen.

(u) Please fund more. Currently it covers a fraction of the real development cost. Bring prototypes to operation in a limited way and iteratively create better products over 3 years or so.

(v) PDS / PRU should be more accurate and clearer, and not arbitrary as of now. For example, for Prime (Space) projects, the satellite resources are to be clearly defined for both POC phase and for production order (after successful completion of SSCT). Also, satellite constraints are to be considered before finalizing the requirements of the product to be developed.

(w) F and G

(x) (f) (h)

(y) We believe iDEX Centre should be a central facility where DISC Challenge winner representatives can all be situated - directly in contact with Nodal Officers for each challenge. Scouting startups should be outsourced to experienced private players or IIMs who have a better understanding of startup needs and stress points and can help bridge gaps in the valley of death.

- (z) Getting the Nodal Agency responses and closures on Orders.
- (aa) Quick scrutiny of the deliverables and timely release of funds by iDEX will ensure an effective product development in the scheduled projection completion date.

#### **4.8 Understanding Defence Requirements.**

There have been less number of Open Challenge winners. Reason for the low figures needs to be researched and the Partner Incubators could be assigned to understand the defence requirement and ensure higher applications in Open Challenges.

#### **4.9 Approachability and Availability of PIs**

Start-ups and MSMEs thrive when the ecosystem is attentive to their requirements and offers a conducive environment for their operations. With the ongoing digital transformation, entrepreneurs have easy access to information regarding government policies, institutional processes, and social media platforms, enabling them to venture into innovative endeavours confidently. In the iDEX initiative, the comprehensive iDEX website provides all necessary details, with processes streamlined online. Despite this, during the course of this study, many Partner Incubators (PIs) were unresponsive via the email contact provided on the iDEX website. This lack of responsiveness poses a potential challenge for new entrants in the start-up landscape. Hence, ensuring the approachability of PIs is vital for fostering a productive working environment. Additionally, consistent availability of program managers at PIs is

imperative. Constraints such as manpower shortages or personnel engaged in multiple tasks could hamper effective communication between PIs and start-ups/MSMEs.

## **Chapter -5: Recommendations**

### **5.1 A Successful Scheme**

The iDEX initiative represents a significant step forward in fostering innovation within the Defence sector. By actively engaging partner Incubators (PIs), the initiative creates a platform for startups to contribute their innovative solutions to address the evolving challenges faced by the defence industry. Embracing this initiative demonstrates a commitment to leveraging the entrepreneurial spirit and technological advancements for the benefit of national security and strategic interests. iDEX initiative is a step in the right direction.

### **5.2 Continuous Refinement in Policy**

The Ministry of Defence has meticulously crafted a framework to facilitate the iDEX scheme, aimed at promoting innovation within the Defence sector. This framework reflects a commitment to streamlining processes and providing support structures that enable startups to navigate the complexities of working with the Defence establishment. Continual refinement and enhancement of the scheme over the past six years underscore the Ministry's dedication to fostering an environment conducive to innovation and entrepreneurship in Defence.

### 5.3 Positive Contribution of PIs

Partner Incubators (PIs) have played a commendable role in nurturing and supporting start-ups within the iDEX ecosystem. Their efforts in identifying and incubating promising ventures have been instrumental in driving innovation and fostering collaboration between the Defence industry and start-ups. The success of the iDEX initiative owes much to the dedication and expertise of these PIs in guiding start-ups through the various stages of development.

### 5.4 Need for Expansion

As the challenges facing the Defence sector continue to evolve, there is a pressing need to expand the network of incubators participating in the iDEX scheme. While existing PIs have demonstrated their capability, the increasing demand for innovative solutions necessitates the involvement of additional incubators. Furthermore, established PIs may need to scale up their operations to accommodate a broader scope of challenges, recognizing that nurturing start-ups often requires sustained support over an extended period. Towards this PIs need to have more number of technically qualified people to understand the issues being faced by the start ups. The head of the incubation cell of Academic Institutions need to be Professor emeritus with years of experience in the field of innovation. Expansion of PIs would improve the satisfaction levels among the Start Ups/MSMEs.

### **5.5 Need for Development of Defence Expertise**

To effectively address Defence requirements, it is imperative for PIs to develop specialized knowledge and expertise in the domain. This could involve either establishing dedicated Defence-focused incubators or incorporating Defence verticals within existing incubation facilities. By enhancing their understanding of Defence needs and constraints, PIs can better guide start-ups in developing solutions that align with strategic priorities and operational requirements.

### **5.6 Long Term Relationship**

A key objective for Partner Incubators should be to ensure the long-term viability and sustainability of the start-ups they support. Rather than simply facilitating initial growth, PIs should aim to cultivate a conducive environment that enables start-ups to thrive and mature into robust entities. This entails providing ongoing mentorship, access to resources, and opportunities for market penetration, thereby increasing the likelihood of start up success and longevity.

### **5.7 Support Failing Start Ups**

Partner Incubators could be entrusted with the responsibility of nurturing start-ups until they reach a point of sustainability and self-sufficiency. The responsibility of iDEX principle of 'Fail Fast and Recover Faster' can be given to PIs to follow and the examples could be shared among PIs as learning value. By setting clear milestones and providing targeted support, PIs can help start-ups navigate the critical stages of development and transition towards independence. This approach not only ensures the



continuity of support but also instills a sense of confidence and stability within the start-up ecosystem.

### 5.8 **Incentivise Partner Incubators**

Incentivizing partner incubators through awards, recognition, and competitive funding can be an effective strategy to encourage performance and foster a culture of excellence within the incubator network. At no point, any of the PI should become redundant in the belief of Start-Up/MSME. To maintain the quality and high standards of PIs, following can be considered for implementation:-

1. **Awards and Recognition.** Establishing awards and recognition programs for partner incubators based on various performance metrics can motivate them to strive for excellence. These awards can be categorized based on criteria such as the number of successful start-ups incubated, job creation, revenue generation, impact on the local ecosystem, and success in securing external funding. Recognition through awards not only acknowledges the achievements of partner incubators but also enhances their reputation and credibility in the entrepreneurship ecosystem.
2. **Competitive Funding.** Introduce a competitive funding mechanism where partner incubators compete for additional financial support based on their performance and proposed initiatives. This can include grants or supplementary funding allocated to top-performing incubators to expand their infrastructure,

enhance support services, or launch new programs aimed at supporting start-ups. By linking funding opportunities to performance, partner incubators are incentivized to maximize their impact and efficiently utilize resources to support start-up growth.

3. Performance Metrics. Define clear and measurable performance metrics for partner incubators to track their progress and outcomes. These metrics should align with the objectives of the incubator network and focus on key indicators of success, such as start-up survival rates, revenue growth, job creation, and graduation rates. Regular evaluation and benchmarking against these metrics enable incubators to identify areas for improvement and implement strategies to enhance their effectiveness.

4. Capacity Building. Offer capacity-building programs and training sessions to equip partner incubators with the knowledge, skills, and resources needed to excel in their roles. This can include workshops on best practices in startup incubation, mentorship programs, access to industry experts, and opportunities for peer learning and collaboration. By investing in the professional development of incubator staff and managers, incubators can enhance their capabilities and deliver better support to start-ups. In addition, the human resource at senior level and also working level need to be upgraded so as to motivate the technically qualified Start Ups and bring about positive behavioural changes.

5. Collaboration and Networking. DIO can facilitate opportunities for partner incubators to collaborate, share resources, and learn from each other's experiences. Encourage the formation of peer networks and communities where incubators can exchange insights, collaborate on joint initiatives, and leverage each other's strengths. By fostering a culture of collaboration and knowledge sharing, partner incubators can collectively drive greater impact and contribute to the growth of the entrepreneurship ecosystem. A central repository of Subject Matter Experts from available PIs can be identified by DIO and promulgated so that right person can be referred for a requirement. Centralising the iDEX ecosystem similar to model followed by BIRAC wherein experts are available on the system portal is one such example.

#### **5.9 Status of Start Ups as Partners**

Start Ups and MSMEs are the Engines of the complete iDEX ecosystem. Their technical acumen, risk taking abilities and enthusiasm towards Atmanirbhar Bharat should not be underestimated. At all times, the environment given to them should be a friendly one to keep them motivated.

#### **5.10 Freedom to Start Ups**

It is very likely that in performing the PI functions, the freedom of Start Ups is lost. It may be time constraint, safety of design parameters, innovative technology, rights of patent etc. Requirement of sharing of data, technical know how should be allowed to be

Start Ups choice and interests of start ups should always be protected. Necessary audit on the human behaviour aspect should be conducted from time to time.

#### 5.11 **Miscellaneous Suggestions**

1. Project progress with the name of respective PI can be made available on iDEX website for all.
2. Assurance of Minimum Order Quantity would bring in more Start Ups to apply in iDEX schemes.
3. Nodal agencies, with their active involvement with Start Ups have been ensuring timely completion of the product trials and development. Ensuring continuous availability of same nodal officer would boost timely completion of the product development.

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### Questionnaire for Partner Incubators

Commodore Naveen Chandra Mamgain is serving in Indian Navy and presently undergoing Masters course at Indian Institute of Public Administration(IIPA), New Delhi. A questionnaire has been prepared by him for the purpose of writing thesis on iDEX scheme and the topic of his dissertation is “Examining the Role of **Partner Incubators(PI)** in iDEX scheme”.

Examining PIs' ability to achieve iDEX-DIO's goals for effective collaboration is the purpose of this questionnaire. The questionnaire is being circulated to all PIs of iDEX scheme. In case you are not able to achieve these objectives what changes would you like to suggest. Your recommendations may be applicable to all PIs or applicable to only few PIs due to any inherent limitations of PIs.

Since each Partner Incubator may differ in their strengths, core skills, infrastructure, and problems, it is desired that Answers be provided with statistics and facts, without being constrained. You may incorporate any additional data, case studies you feel relevant to the study.

You are requested to answer the following questionnaire:-

#### 1. General Information:

- (a) Name of the Partner Incubator.
- (b) When was the incubator set up?
- (c) Since when you have been onboarded as a iDEX PI?
- (d) Number of startups/MSMEs incubated till date.
- (e) Number of incubated startups who are capable of undertaking defence projects.
- (f) Number of incubated MSMEs who are capable of undertaking defence projects.
- (g) List of completed iDEX projects till date.
- (h) Number of completed iDEX projects by a Start up for which procurement order has been awarded.
- (k) Number of completed iDEX projects by a MSME for which procurement order has been awarded.
- (l) List of iDEX projects in progress.
- (m) List of iDEX projects delayed.
- (n) List of iDEX projects terminated midway.

#### 2. Objectives and Alignment:

- (a) How well does your incubator align with the objectives of iDEX-DIO?(You may give the answer in %age)
- (b) Area under the objectives of iDEX-DIO which need further improvement in your incubator and the suggested way ahead
- (c) Have you successfully discovered and nurtured startups/MSMEs working on innovative defence technologies?

(d) In your assessment what are the hurdles in discovery and nurturing of startups/MSMEs you are encountering and its suggested remedy.

**3. Startup Pipeline and Defence Needs Assessment:**

- (a) How do you identify startups/MSMEs that can address the technological needs of India's Armed Forces?
- (b) How do you facilitate the interaction of startups/MSMEs with the iDEX-DIO team and Nodal Agency?
- (c) How frequently do you interact with iDEX-DIO to understand current technological requirements?

**4. Mentorship and Milestones:**

- (d) Describe the mentorship process for selected startups/MSMEs.
- (e) How do you set milestones and objectives for projects in line with iDEX-DIO guidelines?
- (f) How do you ensure technical and financial due diligence for SPARK Grantees?

**5. Strengthening the Ecosystem:**

- (a) What accelerator programs or incubation initiatives do you run to support defence startups?
- (b) How do you promote defence innovations among students and researchers in academia?
- (c) Describe your network of experts and business mentors for the purpose of initiating business for the start-ups or scaling up business of start-ups/MSMEs.

**6. Collaboration and Outreach:**

- (a) How actively do you participate in iDEX-DIO's outreach and promotional activities?
- (b) Have you engaged in Defence India Startup Challenges, Open Challenges, or Prime Challenges?
- (c) How often do you interact with DIO and nodal agencies and what are the regular occasions of interaction ?
- (d) Have you been able to achieve the expected outcomes as per the guidelines of iDEX-DIO for PIs.

**7. Prototyping and Piloting Support:**

- (a) How do you assist startups/MSMEs in prototyping and piloting their defence-related products?
- (b) Describe your network of experts and mentors for this purpose.
- (c) To what extent do you provide assistance in Patenting the Start Up/MSMEs innovative product

**8. Policy Adequacy and Recommendations:**

- (a) Do you believe that the current iDEX policy framework is adequate to achieve the intended results?
- (b) What improvements or modifications would you recommend for better performance of iDEX scheme?
- (c) What changes need to be brought about to minimize delay in projects or termination of projects mid way?
- (d) Should the policy pertaining to funds/grants or the deadline for project completion be altered in any way?
- (e) Do you recommend iDEX policy to categorise projects based on their complexity and accordingly have variation in its clauses?
- (f) How is the iDEX policy for incubators different from policies from schemes of other Ministries?
- (g) Do you recommend any of the policy clauses on incubators of other Government Ministries to be incorporated in iDEX policy?

**9. Way Ahead:**

- (a) How can collaboration of iDEX-DIO with partner incubators be enhanced?
- (b) What steps can be taken to further boost innovation in the defence sector?

**10. Additional Comments:**

- (a) Any other insights, challenges, or success stories you'd like to share?



**Innovations for Defence Excellence -Survey on role of Incubators in iDEX scheme**  
 Greetings. I am Commodore Naveen Chandra Mangain, serving in Indian Navy and presently I am undergoing course at Indian Institute of Public Administration(IIPA) New Delhi. The topic of my dissertation is “Examining the Role of Partner Incubators(PI) in iDEX scheme”. A questionnaire has been prepared for the purpose of thesis on iDEX scheme. This questionnaire is prepared for all the companies having knowledge of iDEX scheme. I would be grateful if you could spare little time (not more than 10 minutes) to answer the following questions on the subject. You may choose to not answer any question, in case the question is not applicable to you.  
 Thank you for sparing your valuable time and inputs.

### 1. Section 1: Introduce Yourself

1. Classification of your company?

- Innovator
- Start Up
- MSME
- Other category

2. Name of your company

Your answer

3. When was your company formed?

Your answer

4. Has your company been a iDEX winner?

- Yes
- No

5. Which Partner Incubator/PIs have you been associated with?

Your answer

6. Give the description of challenge/challenges for which you were a iDEX winner and it's status(In Progress or completed)

Your answer

### Section 2: Questionnaire for iDEX winners

In this section, the questions are meant for Start-Ups companies who won the iDEX challenge. You may have completed the product development/ faced some hurdle and dropped the project/ or are still in working on the product development. Your inputs on the experience gained with iDEX scheme is relevant to this study.

7. Name one technical support you sought from your PI

Your answer

8. How do you rate the technical support received from your Partner Incubators in progressing with development of the product?

Poor

1

2

3

4

5

Excellent

9. Name one business support you sought from your PI

Your answer

10. How do you rate the business development support received from Partner Incubators during product development stage and thereafter in scaling up the business?

Poor

1

2

3

4

5

Excellent

11. Were you provided testing facility by PI

Yes

No

Have not reached that stage yet

12. How do you rate the facility being provided by PI for testing your product during different stages of production?

Poor

1

2

3

4

5

Excellent

13. Were you provided guidance by PI on obtaining Patent on your product?

Yes

No

Have not reached that stage yet

14. How do you rate your satisfaction levels with PIs in respect to patenting of your product

Very Low

1

2

3

4

5

Very high

15. As a start up/MSME, which area are you more concerned for assistance from Partner Incubator? Please give in the order of priority

(a) Technical support

(b) Raising of fund (Matching contribution) for development of product

(c) Raising of fund for scaling up of business

(d) Assistance for release of fund from iDEX-DIO

(e) Any other assistance

Your answer

16. Once you have completed the iDEX project you are working on currently, would you like to change the PI in your next iDEX project?

Yes

No

May be

17. In your opinion, under which DISC model, does a start up require PIs assistance the most?

DISC

IDEX PRIME

OPEN CHALLENGE

ADITI

ALL DISC MODEL

18. Are you keen on taking up challenges with higher product development cost?

Yes

No

19. In your opinion, are Partner Incubators necessary in the ecosystem for innovation in Defence sector?

Yes  
 No  
 Maybe

20. To what extent, the PI/PIs have been successful in bringing the concerns of start ups/MSMEs to DIO/nodal agency(problem statement originator) and resolving them.

Not effective at all

1

2

3

4

5

Very effective

21. The Incubators are selected to become partners with iDEX through eligibility criteria. In your opinion, can all the Partner Incubators(28 as on Feb 24) with iDEX be equated same in terms of capability?

Yes

No

Maybe

22. The Incubators mentor the start ups in all fields including ones dealing with defence products. In your opinion, should there be Incubators dedicated to only defence related innovations?

Yes

No

23. Presently DIO has onboarded PIs from academia as well as Private/Industry. Would you like to have more number of Incubators from Private/Industry?

Yes

No

No change required(Status Quo)

24. Partner Incubators are to conduct out reach programmes and scout for suitable start ups upon launch of any Start Up Challenge. In your opinion, to what extent, are the PIs able to meet this objective.

Not effective at all

1

2

3

4

5

Very effective

25. Which are the areas where you faced problems and did not have solution for it and believe that by some provision in policy may help in future

Your answer

26. Do you believe that by giving the Minimum order Quantity (MoQ) assurance in the challenge itself will bring in applications from more companies.

Yes

No

27. Suggest recommendations for improvement in the iDEX ecosystem or policy with respect to any one or more of following aspects:-

- (a) Processes of PIs
- (b) Responsibilities of PIs
- (c) Criteria for selection of PI
- (d) Process of assigning startup with a particular PI
- (e) Objectives defined for PIs towards mentoring, Outreach etc.
- (f) Funding
- (g) Auditing
- (h) Any other aspect.

Your answer

[Back](#)

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**Inputs Received from PIs****SINE, IIT Bombay****1. General Information:**

- (a) Name of the Partner Incubator: SINE, IIT Bombay
- (b) When was the incubator set up?- 2004
- (c) Since when you have been onboarded as a iDEX PI? - 2018
- (d) Number of startups/MSMEs incubated till date. : 40 projects
- (e) Number of incubated startups who are capable of undertaking defence projects.
- (f) Number of incubated MSMEs who are capable of undertaking defence projects.
- (g) List of completed iDEX projects till date.
  - i. Reduction of RCS in Naval Warships.
  - ii. Motion Pattern Classification on online/active data
- (h) Number of completed iDEX projects by a Start up for which procurement order has been awarded. - 1
- (o) Number of completed iDEX projects by a MSME for which procurement order has been awarded.- 0
- (p) List of iDEX projects in progress - 36
- (q) List of iDEX projects where the closure was delayed – Almost all
- (r) List of iDEX projects by Start Ups terminated midway: 2
- (s) List of iDEX projects by MSMEs terminated midway. 0

**Inputs Received from SINE, IIT Bombay**

<b>SNO</b>	<b>Type of Winner</b>	<b>Project Title</b>	<b>Status</b>	<b>Order Received</b>
1	Startup	Desaliation system (water purification) and Bilge Oily water separation system	Terminated	NA
2	MSME	To create a portable Spoof Emitter for surveillance and ground based air defence weapons	In Progress	NA
3	Startup	Data Analytics for Air Trajectory	Completed	Not Yet
4	Startup	To create a portable Spoof Emitter for surveillance and ground based air defence weapons	Terminated	NA
5	MSME	REDUCTION OF RCS OF NAVAL WARSHIPS	Completed	Not Given
6	Startup	Generation of Quantum Security keys over 200 Kms	In Progress	Yes
7	Startup	Implementation Of Axial Flux BLDC Motor Drive FOR 7.0M RIB	In Progress	NA
8	Startup	Non-Lethal Devices to Stop Vessels at Sea	In Progress	NA
9	Startup	Enhancing UDA by using AI/ML or other Novel Techniques	In Progress	NA
10	Startup	Skin Spray Gun	In Progress	NA
11	Startup	Motion Pattern Classification on Online / Active data	Completed	Yes
12	MSME	FM CW Real time RADALT Tester	In Progress	NA
13	MSME	Development of Wide Band HF Modem for Networked secure voice, data & Video Communication.	In Progress	NA
14	MSME	Adaptive data rate Modem	In Progress	NA
15	MSME	Silent Overwatch For Infantry Combat Vehicles Using Fuel Cell/Alternate Fuel based Auxiliary Power	In Progress	NA

SNO	Type of Winner	Project Title	Status	Order Received
16	MSME	Development of Wide Band HF Modem for Networked secure voice, data & Video Communication	In Progress	NA
17	MSME	Precision Guided Kit for 81mm Mor Amn	In Progress	NA
18	Startup	AIR LAUNCHED FLEXIBLE ASSETS- SWARM (ALFA-S)	In Progress	NA
19	Startup	Challenge # 42 - Axial motor based portable submersible pumps in order to sustainability reduce weight	In Progress	NA
20	Startup	Challenge# 24- AI based ship recognition software using image processing	In Progress	NA
21	MSME	Challenge #40 - Remote Controlled NBC monitoring Bot using suitable sensors	In Progress	NA
22	Startup	Challenge # 27- Multi Sensor real time monitoring of running machinery on-board submarine	In Progress	NA
23	MSME	To Develop an AI based UGV for Identifying and Marking Mines in a Minefield	In Progress	NA
24	MSME	Challenge # 13- Developing an AI based Collision Avoidance System for unmanned vessel.	In Progress	NA
25	Startup	Advance Truss Bridge	In Progress	NA
26	Startup	Challenge #17- Design and Development of Steering Console for Manoeuvring of Underwater Vessels	In Progress	NA
27	Startup	Axial Flux Motor based 40 TPH submersible pump	In Progress	NA
28	MSME	Challenge # 37- AI based crawling inspection BOT	In Progress	NA
29	MSME	Challenge #74- Autonomous operation (starting, running and shutting down) of a Diesel	In Progress	NA

SNO	Type of Winner	Project Title	Status	Order Received
		Alternator suitable for charging Lithium-Ion Batteries		
30	MSME	Challenge # 70 - Digital radio frequency memory (DRFM) based simulator on a drone for AC training and radar calibration	In Progress	NA
31	MSME	Challenge # 18 -Reusable off board missile decoy	In Progress	NA
32	MSME		In Progress	NA
33	Startup	Smart Shore Supply and Charging Cable Mobile Unit	In Progress	NA
34	Startup	Beamforming ASIC based RADAR with massive MEMO Technology	In Progress	NA
35	Startup	ASIC based Space Communication using software defined Antenna	In Progress	NA
36	Startup	Micropropulsion system for Cubesats	In Progress	NA
37	Startup (LLP)	Smart lightweight retractable and easily deployable gangways with cable housing for submarine shore supply and and shore charging cables	In Progress	NA
38	Startup	Mission Planner (Tota Spherical Robot Surveillance Version)	In Progress	NA
39	Startup	Kamikaze Drone	In Progress	NA
40	Startup	Expandable Active Decoys	In Progress	NA

**Inputs received from FITT, IIT Bombay**

**1. General Information:**

(a) Name of the Partner Incubator.

**Ans: Foundation For Technology Transfer (FITT-IIT Delhi)**

(b) When was the incubator set up?

**Ans: 09 July 1992**

(c) Since when you have been onboarded as a iDEX PI?

**Ans: 2019**

(d) Number of startups/MSMEs incubated till date.

**Ans: 190+**

(e) Number of incubated startups who are capable of undertaking defence projects.

**Ans: 40+**

(f) Number of incubated MSMEs who are capable of undertaking defence projects.

**Ans: NIL**

(g) List of completed iDEX projects till date.

**Ans: 7**

(h) Number of completed iDEX projects by a Start up for which procurement order has been awarded.

**Ans: 6**

(t) Number of completed iDEX projects by a MSME for which procurement order has been awarded.

**Ans: 1**

(u) List of iDEX projects in progress.

**Ans:**

<b>S. No.</b>	<b>Team name</b>	<b>Challenge Name</b>
1	Navyug	Frind or Foe Identification system
2	Kinetex	Active Protection System (APS)
3	QED ANALYTICALS LLP	PREDICTIVE, PREVENTIVE & PRESCRIPTION MACHINE MONITORING

S. No.	Team name	Challenge Name
4	COLLABORATIVE INTELLIGENCE PVT. LTD.	AI BASED SATELLITE IMAGE ANALYSIS
5	OXYGEN 2 INNOVATION PVT. LTD.	COMPUTER GENERATED FORCES / INTELLIGENT TARGETS FOR EMBEDDED VIRTUAL TRAINING SYTEM
6	CORMEUM TECHNOLOGIES PVT. LTD.	REMOTE REAL TIME IN FIGHT HEALTH MONITORING OF AIRCREW
7	COMPILER AI LABS PVT. LTD.	Certified Optimising compiler and code analyser based on AI Techniques
8	BOTLAB DYNAMICS	UNMANNED SURFACE AND UNDERWATER VERTICLE
9	CRIMSON ENERGY EXPERT PVT. LTD.	Development of Machine learning Algorithms for maritime anomaly Detection
10	BRISK OLIVE BUSINESS SOLUTIONS PVT. LTD.	RAPID FOLDABLE INFANTRY ASSAULT BRIDGE
11	FCTECNRGY PVT. LTD.	SILENT OVERWATCH FOR INFANTRY COMBAT VEHICLES USING FUEL CELL / ALTENATE FUEL BASED AUXILIARY POWER
12	APT SOFTWARE	DEFENDER (DATA COLLECTION , COLLATION AND ANALYSIS)
13	OXYGEN 2 INNOVATION PVT. LTD.	AR/VR based shorti Prepration aid for helicopter Pilots
14	OXYGEN 2 INNOVATION PVT. LTD.	INFUSION OF SMART GLASSES AUGMENTED REALITY AND VIRTUAL REALITY IN TECHNICAL TYPE TRAINING
15	GEOCON SMART SYSTEMS PVT. LTD.	DEVELOPMENT OF WIDE BAND HF MODEM FOR NETWORKED SECURE VOICE, DATA & VIDEO COMUNICATION
16	SPHERULER SOLUTIONS PVT. LTD.	FIND OUT THE OVERLAPPING PERCENTAGE OF TWO 3D OBJECTS AND DISPLAY OF COMBINED GEOMETRY
17	QED ANALYTICALS LLP	MULTI SENSOR REAL TIME MONITORING OF RUNNING MACHINARY ON-BOARD SUBMARINE
18	FleetRF	Scalable Wireless Communication Network for Automonous Mobile Platforms'
19	Antsys Innovations Pvt Ltd	Devlopment to achive uniform circular polarisation in designing a cavity backed spiral antenna (1-18GHz)

S. No.	Team name	Challenge Name
20	Skylark Labs India	AI Based FOD detection and classification system for FOD management at IN Air Station
21	Innefu Labs Private Limited	OSINT
22	Innefu Labs Private Limited	Intelligence Fussion Center
23	Aerial IQ India Pvt Ltd	Aviral-A Tethered Drone System for Surveillance and Monitoring Purpose.
24	Ancor Research Labs	Shipborne light weight Integrated ESM cum COMINT System
25	BotLab Dynamics	Disposable Light Weight Drone (DLD) capable of providing the ground soldier with immediate situational awareness
26	QED Analyticals	AI based ship recognition software using image processing
27	Pine Automation	Material Movement Shifting onboard Ship over the hatch door Coaming
28	PAN India Consultants	3D Forward Looking Sonar for surface platforms and Autonomous Underwater Vehicles (AUVs)
29	ZOID AI	AI Based FOD detection and classification
30	Pine Automation	Smart, Lightweight, retractable, and easily deployable cable ganways for Submarine Shore Supply
31	NKM Tech Solutions	3D Forward Looking Sonar for Surface platforms and autonomous underwater vehicles (AUVs)
32	Pine Automation	Labour Saving Device for material Shifting onboard Submarine
33	DV2JS Innovation	Design and Development of Blue Green Lasers for Underwater Application
34	DV2JS Innovation	Design and Development of Electro Optical Infrared Sensor System contained in an external Pod Compose of a variety of sensors
35	DV2JS Innovation	Design and Development of 30mm Proximity Fuze for Gun Mounts
36	ASM International	Digitization of Equipment Unit and launching Mechnasim (LM) of Konkurs M-ATGM Launcher
37	Indigenous Robotic	Kamikaze Drone
38	Pine Automation	System for material movement between jetty and naval ships
39	ZOID technolpogy	Reusable off-board missile decoy
40	SWADESHI EMPRESA PRIVATE LIMITED	Water mist fixed fire fighting system

S. No.	Team name	Challenge Name
41	Machphy solutions	(ITBP) Providing fresh vegetable/ fruit storage in sub zero temp for long duration where jawans remains deployed.
42	Niyoto technologies	Tunnel Detection Technology (BSF)
43	Accurate Industrial Controls	Axial flux motor based lightweight electric OBM with optional fuel cells
44	Mobisec	Plug and play agent based cybersecurity and compromised assesement Audit tool
45	Pine Automation	Disposable of expired ammunition and bombs into sea
46	Almerio Defence and Aerospace	Pre engineered moduler earth cover magazines for high explosives with glass proof doars

(v) List of iDEX projects where the closure was delayed.

Ans:

S. No.	Team Name	Challenge Name
1	Kinetex	Active Protection System (APS)
2	QED ANALYTICALS LLP	PREDICTIVE, PREVENTIVE & PRESCRIPTION MACHINE MONITORING
3	COLLABORATIVE INTELLIGENCE PVT. LTD.	AI BASED SATELLITE IMAGE ANALYSIS
4	OXYGEN 2 INNOVATION PVT. LTD.	COMPUTER GENERATED FORCES / INTELLIGENT TARGETS FOR EMBEDDED VIRTUAL TRAINING SYTEM
5	CORMEUM TECHNOLOGIES PVT. LTD.	REMOTE REAL TIME IN FIGHT HEALTH MONITORING OF AIRCREW
6	COMPILER AI LABS PVT. LTD.	Certified Optimising compiler and code analyser based on AI Techniques
7	BOTLAB DYNAMICS	UNMANNED SURFACE AND UNDERWATER VERTICLE
8	CRIMSON ENERGY EXPERT PVT. LTD.	Development of Machine learning Algorithms for maritime anomaly Detection
9	BRISK OLIVE BUSINESS SOLUTIONS PVT. LTD.	RAPID FOLDABLE INFANTRY ASSAULT BRIDGE
10	FCTECNRGY PVT. LTD.	SILENT OVERWATCH FOR INFANTRY COMBAT VEHICLES USING FUEL CELL / ALTENATE FUEL BASED AUXILIARY POWER
11	APT SOFTWARE	DEFENDER (DATA COLLECTION , COLLATION AND ANALYSIS)



S. No.	Team Name	Challenge Name
12	OXYGEN 2 INNOVATION PVT. LTD.	AR/VR based shorti Prepration aid for helecopter Pilots
13	OXYGEN 2 INNOVATION PVT. LTD.	INFUSION OF SMART GLASSES AUGMENTED REALITY AND VIRTUAL REALITY IN TECHNICAL TYPE TRAINING
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15	SPHERULER SOLUTIONS PVT. LTD.	FIND OUT THE OVERLAPPING PERCENTAGE OF TWO 3D OBJECTS AND DISPLAY OF COMBINED GEOMETRY
16	QED ANALYTICALS LLP	MULTI SENSOR REAL TIME MONITORING OF RUNNING MACHINARY ON-BOARD SUBMARINE
17	FleetRF	Scalable Wireless Communication Network for Automonous Mobile Platforms'
18	Antsys Innovations Pvt Ltd	Devlopment to achive uniform circular polarisation in designing a cavity backed spiral antenna (1-18GHz)
19	Skylark Labs India	AI Based FOD detection and classification system for FOD managment at IN Air Station
20	Innefu Labs Private Limited	OSINT
21	Innefu Labs Private Limited	Inteligence Fussion Center
22	Aerial IQ India Pvt Ltd	Aviral-A Tethered Drone System for Surveillance and Monitoring Purpose.

(w)List of iDEX projects by Start Ups terminated midway.

Ans:

S. No.	Team name	Challenge name
1	Accurate Industrial Control	Axial Flux Motor based lightweight OBM with optional fuel cells
2	Accurate Industrial Control	Axial Flux Motor based portable Submersible Pump
3	DSE Technologies	Development of Long Range Communication for Tracking and Exchanging short message between helicopter and ship
4	Pareto Tree	Personal Location Device with Fall Detection for Firefighters/ Damage Control Team on-board ships.
5	LOGIC FRUIT	SECURE HARDWATE BASED

S. No.	Team name	Challenge name
		ENCRYPTION DEVICE

(x) List of iDEX projects by MSMEs terminated midway.

**Ans: NIL**

## Input Received from T-Hub

Sl.no.	Questions	Answers
1	Name of the Partner Incubator.	T Hub Hyderabad
2	When was the incubator set up?	Incorporated in 2015
3	Since when you have been onboarded as a iDEX PI?	2019
4	Number of startups/MSMEs incubated till date.	T hub is handling around 50 challenges, there is no limitation of handling number of challenges. T hub is well equipped to incubate startups as they have pool of mentors, SMEs and Defence advisory committee (DAC). T Hub has well designed mechanism to expand the resources to serve the startups better.
5	Number of incubated startups who are capable of undertaking defence projects.	37
6	Number of incubated MSMEs who are capable of undertaking defence projects.	1
7	List of completed iDEX projects till date.	1
8	Number of completed iDEX projects by a Start up for which procurement order has been awarded.	3 (1 + 2 (AON raised))
9	Number of completed iDEX projects by a MSME for which procurement order has been awarded.	NA
10	List of iDEX projects in progress.	45
11	List of iDEX projects where the closure was delayed.	NA
12	List of iDEX projects by Start Ups terminated midway.	NA
13	List of iDEX projects by MSMEs terminated midway.	NA

### Inputs Received from T Hub

Sl.no.	List of projects handled by T Hub
1	Illegal usage of Drones
2	GPS Anti Jam Device
3	Portable Spoof Emitter System
4	Friend or Foe Identification System
5	Illegal usage of Drones
6	Computer Generated Targets for Virtual Training
7	Non-lethal devices for stopping vessels at sea
8	Miniature of electronics modules by use of low power industrial devices and ruggedizing hardware and software components
9	Monolithic Telescope based Imaging System
10	Development of AI enabled welders' helmet for real time display for welding parameters like voltage, current, traverse speed, electrode stick out etc., for immediate corrective control by welder during MIG & TIG welding processes
11	Low cost morpene
12	Caged drone with Thermal imaging camera (TIC) for fire fighting in confined spaces
13	Design and development of virtual assistant with AI/ML and AR based tools deployed onboard ships/ submarine to support maintenance crew for radar system
14	Design and development of virtual assistant with AI/ML and AR based tools deployed onboard ships/ submarine to support maintenance crew for radar system
15	Development of Torque generator stator - 800 intended for use in gunner sight of Tank -T90
16	Development of Torque generator stator - 1000 intended for use in gunner sight of Tank -T90
17	Autonomous starting running and shutting
18	Hydro acoustic AWS vector sensor which can be used with drones
19	Design and development of virtual assistant with AI/ML and AR based tools deployed onboard ships/ submarine to support maintenance crew for radar system
20	Hand-Held Hardkill Counter UAS system net drone
21	Beam forming ASIC based radar with massive MIMO technology
22	Digital radio frequency memory(DRFM) based simulator on a drone for AC training and radar calibration
23	Disposable Lightweight Drone (DLD) capable of providing the ground soldier with immediate situational awareness
24	Submersible boat
25	Converting oxygen torpedoes to UW targets for ASW Training and practice Torpedo Firing (DISC 7)
26	Airborne high performance multi-mode Active Electronic Scanned Array (AESA) radar

<b>Sl.no.</b>	<b>List of projects handled by T Hub</b>
27	Automation of track adjustment mechanism of BMP II
28	Long range communication technology for locating torpedoes
29	Instant cooling vest for fire fighters
30	Hardware enforced solution against advanced, persistent and coordinated attacks to prevent
31	Secure AV communication
32	Improved Lighting Management system
33	Intelligent system for identification of phishing emails, fake websites and sandboxing targeted entities
34	Cybersecurity and cyber investigation training courseware
35	Autonomous weaponized boat swarms
36	Attack surface monitoring tool for continuous discovery analysis, remediation and monitoring of cyber security vulnerabilities and potential attack vectors for inventory
37	Unmanned seaplane zebra
38	Swarms Anti Drone system
39	Implementing industry 4.0 in shipyard without Wifi connectivity
40	Wearable large UAVs by MARCOS
41	Drone Forensics
42	Beam steering Ku band SATCOM antenna
43	Automation of Security Orchestration, Automation, and Response (SOAR)
44	Challenge 21 PRIME
45	Challenge 21.1 DISC8

**Inputs Received from ITIC, IIT Hyderabad**

## 1. General Information:

(a) Name of the Partner Incubator: I TIC Fondation IIT Hyderabad

(b) When was the incubator set up: 2015

(c) Since when you have been onboarded as a iDEX PI: 2019

(d) Number of startups/MSMEs incubated till date: 35

(e) Number of incubated startups who are capable of undertaking defence projects:

All

(f) Number of incubated MSMEs who are capable of undertaking defence projects:

All

(h) Number of completed iDEX projects by a Start up for which procurement order has been awarded: Nil

(j) Number of completed iDEX projects by a MSME for which procurement order has been awarded: Nil

(k) List of iDEX projects in progress: 43

(l) List of iDEX projects delayed: 5-10 Approx

(m)List of iDEX projects terminated midway: 01

### Inputs Received from ITIC, IIT Hyderabad

S.No	Startup Name	Problem Statement	Remarks
1	Anvation Labs Pvt. Ltd.	Secure Hardware Encryption Device	Delayed, In Progress
2	Aditya Precitech Pvt. Ltd.	4-Axis Stabilised Antenna for C & Ku Band	Delayed, In Progress
3	Aditya Precitech Pvt. Ltd.	Indegenous Loitering Munitions	Delayed, In Progress
4	Elmot Alternators Pvt. Ltd.	Development Implementation of Inertial Energy Storage System (IESS)	Delayed, In Progress
5	CoreIOT Technologies	Helmet Mount Conformable Antenna	Delayed, In Progress
6	ApexPlus Technolgies	FMCW Real time RADALT Tester	Delayed, In Progress
7	Arbudamba Consultancy Pvt. Ltd.	Non hull penetrating connectivity solution for submarines at harbour	Delayed, In Progress
8	Varuni Systems Pvt. Ltd.	AI based Adaptive Noise Cancellation for SONARs of Autonomous Underwater Vehicles (AUVs) and Shipborne SONARs.	Delayed, In Progress
9	Tardid Technologies Pvt. Ltd.	AI based multi-Radar signal conversion, distribution and multi-target tracking for IN ships based on particle filtering.	Delayed, In Progress
10	Jisnu Communications Pvt. Ltd.	ASIC Based Space Communication using Software Defined Antenna	Delayed, In Progress
11	Saira IoT Solutions Pvt. Ltd.	Underwater Photography Noise Cancellation using Artificial Intelligence and Deep Learning	Withdrawn
12	Veera Tacticals Dynamics LLP	Moisture Wicking Hydrophobic Weapon Cover	Extension provided
13	Vimal Fire Controls Pvt. Ltd.	Aerogel based Fire Fighting proximity suit for better efficiency in fire fighting	Delayed, In Progress
14	SPM (India) Limited	Development of equipment capable of automatic weighing and filling of powder like substance explosives within 2mg tolerance (i.e 28-30 Mg.)	Delayed, In Progress
15	Guardinger Technologies (OPC) Pvt. Ltd.	AI Based Remote Monitoring System to access wear down of Outboard Shaft Bearing (A & P Bracket, outer and inner stern tube bearing)	Delayed, In Progress
16	SPM (India) Limited	Design of Active Hydro Pneumatic Supressions with Variable dampening characteristics to meet different road profiles	Delayed, In Progress

S.No	Startup Name	Problem Statement	Remarks
17	Anawave Varuni Systems and Solutions LLP	Long Range Communication Technology for locating Torpedoes	Delayed, In Progress
18	Saif Automations Services LLP	Autonomous Beach Check-survey Device	In progress
19	CoreIOT Technologies	Development to achieve uniform circular polarization in designing a Cavity Backed Spiral Antenna (1-18 GHz)	In progress
20	Anawave Varuni Systems and Solutions LLP	Noise Augmentation Unit for submarine	Delayed, In Progress
21	Vimal Fire Controls Pvt. Ltd.	Fire Suppressant material that can suppress fire in the initial stages only	Delayed, In Progress
22	Symtronics Automation Pvt. Ltd.	AI Based Remote Monitoring System to access wear down of Outboard Shaft Bearing (A & P Bracket, outer and inner stern tube bearing)	Delayed, In Progress
23	Raphe mPhibr Pvt. Ltd.	AI-enabled Floatation Device dispersal drone	Delayed, In Progress
24	Aeromobix System Pvt. Ltd.	Portable Hydraulic Metal Cutter	Delayed, In Progress
25	ARKA Aerospace Pvt. Ltd.	Hand-held hard-kill counter UAS system	In progress
26	Guardinger Technologies (OPC) Pvt. Ltd.	AI based adaptive Noise Cancellation for SONARs of Autonomous Underwater Vehicles (AUVs)	In progress
27	Extreme Definition Defence Systems Pvt. Ltd.	Blue Green laser Technology based on Light Detection and Ranging (LiDAR) to establish communication from a ship or an aircraft to submarine	In progress
28	Extreme Definition Defence Systems Pvt. Ltd.	Blue Green lasers for underwater applications	In progress
29	MQS Technologies Pvt. Ltd.	Automation of track adjustment mechanism of BMP-II	In progress
30	Vasbeam Pvt. Ltd.	30mm proximity fuze for gun mounts	In progress
31	NimbusParc Technolab Pvt. Ltd.	High definition video data streaming engine capable of overcoming High latencies and packet loss over limited bandwidth	In progress
32	NimbusParc Technolab Pvt. Ltd.	Next Generation File Transfer Solution Capable of overcoming High latencies and packet loss over limited bandwidth	In progress
33	Unnayan Defence	Hand Held Hard Kill Counter UAS (Net	In progress



S.No	Startup Name	Problem Statement	Remarks
	Technologies LLP	Grenade)	
34	Veera Tacticals Dynamics LLP	Achieving IR and Ultrasonic stealth through advanced material insulation	In progress
35	Dhanvanthri Engineers Pvt. Ltd.	Deep Fat Fryer Gimbaled Frame	In progress
36	Nitro Dynamics Aerospace & Defence Private Limited	Light weight Integrated Indigeneous ELINT/COMINT System for NSUAS /MULE Class RPA	In progress
37	Binford Research Labs Pvt. Ltd.	Hand-held hard kill counter UAS system	In progress
38	Velmenni Research and Development Pvt. Ltd.	Non hull penetrating connectivity solution for submarines at harbour	In progress
39	Zebu Intelligent Systems Private	Compact Drones for operations at sea boarding & Spill response management	In progress
40	Edgeforce Solutions Pvt. Ltd.	Fog Penetration RADAR	In progress
41	Vimal Fire Controls Pvt. Ltd.	Environmentally Benign fixed firefighting (Suppression) system for machinery spaces	In progress
42	Avantel Limited	Beam Steering Ku band SATCOM Antenna over IN SATCOOM network for MR Aircraft	In progress
43	Avantel Limited	Portable (Handheld/Manpack) Ku band Terminal for IN SATCOM Network	In progress
44	IPHIPI Technologies Pvt. Ltd.	Voice Recognition Software to mitigate cyber frauds	In progress

### Inputs Received from Forge, Coimbatore

#### 1. General Information:

#	Questions	Response
a	Name of the Partner Incubator	Coimbatore Innovation & Business Incubator - Forge
b	When was the incubator set up?	21/03/2014
c	Since when you have been onboarded as a iDEX PI?	Since inception of iDEX (April 2018)
d	Number of startups/MSMEs incubated till date.	Overall - 220+ Defence & Aerospace - 60+
e	Number of incubated startups who are capable of undertaking defence projects.	22
f	Number of incubated MSMEs who are capable of undertaking defence projects.	16
g	List of completed iDEX projects till date.	Total #9 1. See Through Armour - Big Bang Boom & Ajna Lens 2. Remotely Piloted Airborne vehicle - ZMotion Autonomous 3. Integrated Mobile Camouflage System (Multi Spectral Camouflage Nets) - HyperStealth Tech 4. Development of AI based Training modules for Technicians for operation and maintenance of Su-30MKI aircraft - Parallax Labs 5. NewSpace Research - High Altitude Pseudo Satellite (HAPS) Stratospheric UAS 6. Flutura Business - Predictive, Preventive & Prescriptive Machine Monitoring 7. Carbon Light - Carbon Fibre Winding 8. TSC - Underwater navigation system for AUV 9. TSC - Portable RCS measuring device
h	Number of completed iDEX projects by a Start up for which procurement order has	#3 Order received (Ser No 2,3 & 4) #2 in RFP process(Ser No 1) #1- Under process to Make 1(Ser No 5)

#	Questions	Response
	been awarded.	#1 - Under trial and DGQA evaluation (Ser No 7) #1 - AoN accorded (Ser No 8 & 9)
i	Number of completed iDEX projects by a MSME for which procurement order has been awarded.	#1 - Startups - 4 MSMEs - 5 <b>Note:</b> For Ser No. 6 - as there are 2 other startups competing for the same challenge have not completed their demonstrations yet, the AoN process has not been initiated. Estimated time of initiation is June 2024 (based on Demo completion deadline for the startups)
j	List of iDEX projects in progress.	42
k	List of iDEX projects delayed	37 The following has contributed for the delay in execution of the Product Development:- 1. Pandemic (COVID 19) 2. Delay in finalization of PDS/PRUs from Nodal Agency 3. Fulfilling Conditions Precedent 4. Change in Nodal Officer 5. Raising of Funds/Investment 6. Supply chain issues 7. Procedural Delays from Nodal Agency & DIO ends
l	List of iDEX projects terminated midway.	6

**Visit to Partner Incubators**



**SINE, IIT Bombay**



**Venture Center, Pune**

**Visit to Partner Incubators**

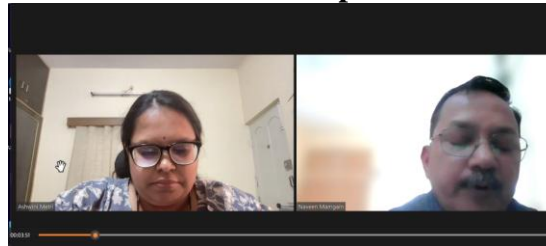


**FITT, IIT Delhi**



**Maker Village in 2022**

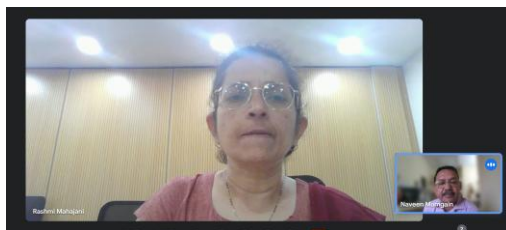
Snapshots of Interview with PIs



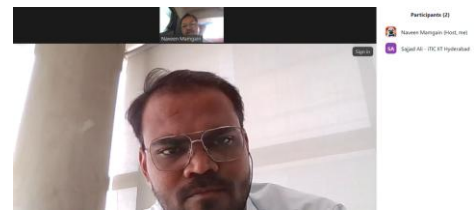
Interview with Forge, Coimbatore



Interview with FITT, IIT Delhi



Interview with SINE, IIT Bombay



Interview with ITIC, IIT, Hyderabad