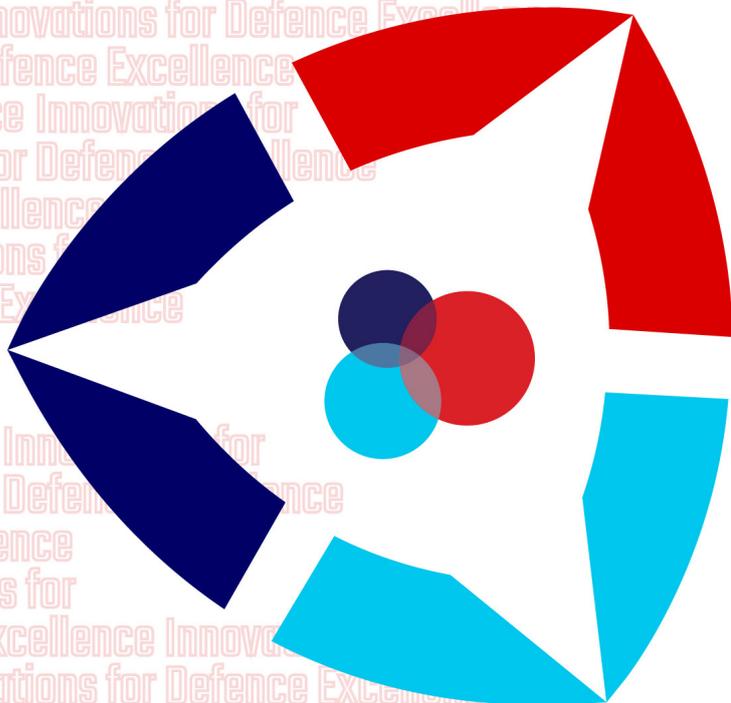


# **iDEX** Innovations for Defence Excellence



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# ACKNOWLEDGEMENT

iDEX has been designed to harness the strengths of Indian innovators to serve needs of Indian defence landscape. Such a vast endeavor is only possible with the help and support of a large number of individuals, who bring in various insights, inputs, effort, and guidance. DIO-iDEX was launched by Hon'ble PM in April 2018 and shepherded by the Hon'ble Defence Ministers. iDEX was operationalized under the guidance of Dr. Ajay Kumar, Defence Secretary, whose continued patronage has brought iDEX to a considerable distance in a short period of time. Shri Subhash Chandra, Secretary Defence Production, and Chairman DIO has been a guide and mentor to the entire effort.

NITI Aayog led by Shri Amitabh Kant and Atal Innovation Mission headed by Shri R Ramanan have been the guiding force in shaping iDEX. The AIM team assisting Department of Defence Production with iDEX, comprising Mudit Narain, Programme Director, and Saksham Saxena, Expert, went above and beyond their duty and have helped design and implement the current structure of iDEX with deep insights, long term vision, and continued hard work.

Vishwanathan Sahasranamam, CEO of Forge, took up iDEX as a personal endeavour, and delivered activities and inputs that have provided an innovator-friendly face to iDEX. He has been instrumental in bringing key partnerships to this effort.

My team members including Vivek Virmani, Ravin Kulshrestha, Rashmi Sinha, Dr. V K Rai, Chandandeep Singh, Kritika Chaudhary, Arvind Kumar and others have worked beyond their existing work load to bring iDEX to a stable orbit.

I thank all partners and stakeholders in the Armed Services, too many to name, for bringing in their support and guidance to this effort. iDEX is just starting off, and I hope and expect to take this effort further with the strength of the Indian Innovation Ecosystem.

This compendium brings out all the policies, frameworks, processes, guidelines, standard operating procedures that would act as a ready reckoner for all the stakeholders.



**Sanjay Jaju**  
JS DIP, MOD  
CEO DIO iDEX

# CONTRIBUTIONS



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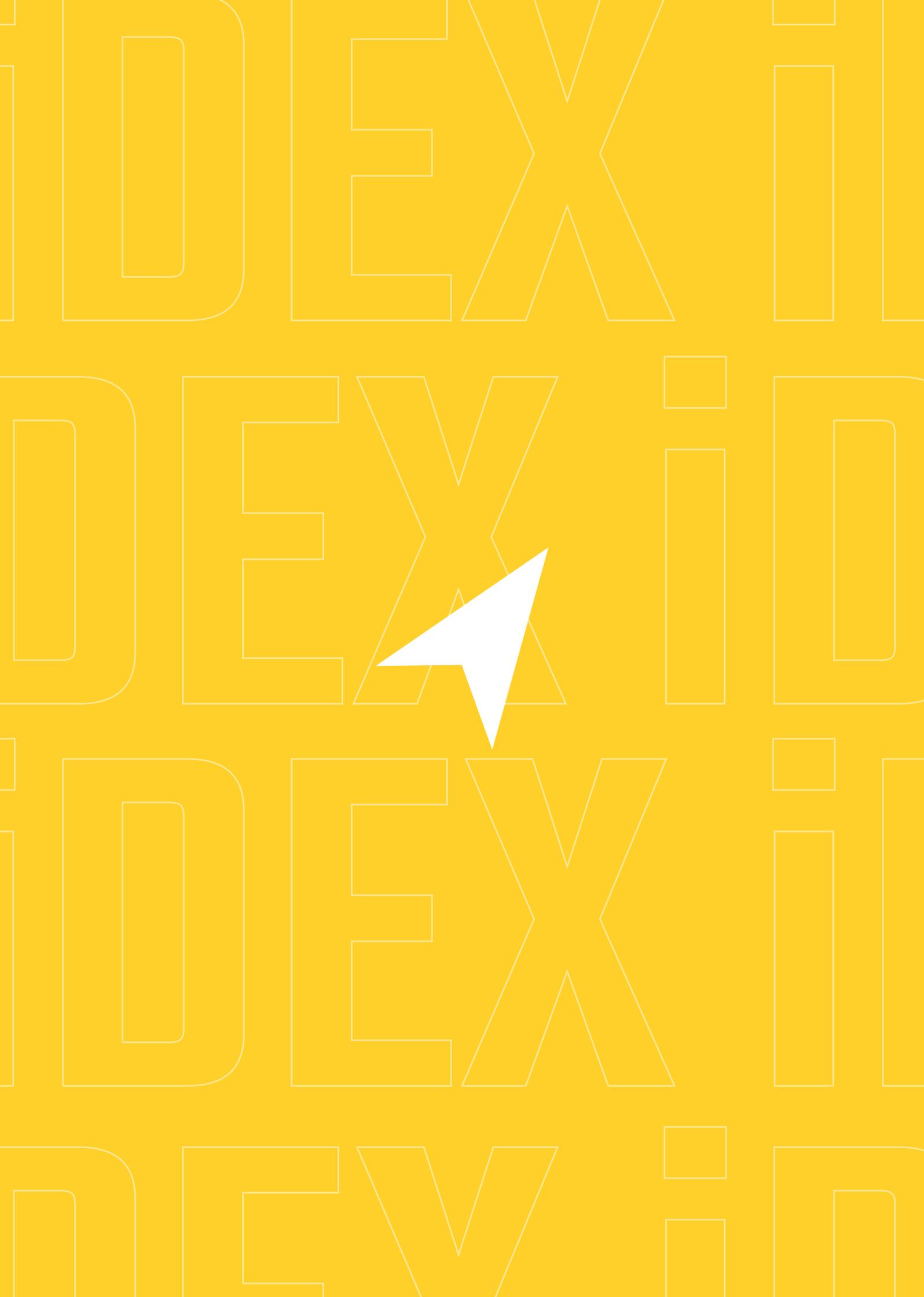
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**iDEX**

**OPERATIONALIZATION PLAN FOR DEFENCE INNOVATION  
ORGANIZATION (DIO) & DEFENCE INNOVATION FUND (DIF)**

## Introduction, Background and Context

One of the first aims of India as a nation since Independence has been to achieve self - reliance in the field of defence and defence production. However, this goal is yet to be achieved. India is the world's largest defence equipment importer and is expected to spend around USD 220 Billion<sup>1</sup> in the coming decade to modernize its armed forces. Around the world, recent years have been marked by rapid technological innovation, in a variety of sectors such as telecom, information technology & connectivity and their impacts are being seen in our daily lives.

In the recent years, the government of India has initiated various schemes like Make In India<sup>2</sup> , Startup India<sup>3</sup> , Atal Innovation Mission (AIM)<sup>4</sup>, etc. to encourage innovation and entrepreneurship in the Indian commercial ecosystem, which includes higher manufacturing in defence. This has also made increasingly evident that achieving the goal of self - sufficiency for the Indian military will require a means to incorporate innovation rapidly in the weapons procurement process.

Ministry of Defence aims to create an ecosystem which fosters innovation and encourages technology development in Defence by engaging R&D institutes, academia, industries, start-ups and even individual innovators. For any corporate, government, or philanthropy, engaging with innovators has become an imperative in recent years, to avoid being disrupted by faster, more agile and responsive competitors. For State functions and public services, the risk of being outcompeted in the market is not as stark as in the private sector due to natural monopolies, but National Defence cannot afford to be behind the country's potential adversaries in capabilities, which are often multiplied by new technologies.

The rates of adoption of innovation for different sectors vary, due to several factors such as applicability, absorption capability of the systems, etc. A special effort is required to reach out and engage the smaller enterprises, start-ups and innovators, which have the flexibility and adaptability to

- 
- 1 "India Plans Massive \$223 Billion Military Spending over next Decade," 2016, <http://www.ibtimes.co.in/india-plans-massive-223-billion-military-spending-over-next-decade-691055>.
  - 2 "Make In India," 2018, <http://www.makeinindia.com/home>.
  - 3 "Startup India," 2018, <https://www.startupindia.gov.in/>.
  - 4 "Atal Innovation Mission," 2018, <http://aim.gov.in/>.

supply the Indian military with innovative and ingenious technological solutions. Such a system will be needed to encourage development of innovative technologies for the defence sector by roping in the nation's industry, start-ups, MSMEs, R&D institutes, academia and even the individual inventors.

This document covers the objective and scope of the Defence Innovation Fund (DIF), steps involved in implementation of DIF and the roadmap for creating an innovation ecosystem for defence called the **Innovations for Defence Excellence (iDEX)**, through funding, guidance, handholding, customer engagement, and facilitation. The document in **Annexures A and B** gives a brief of the funding mechanism for the Organisation, the Fund, its Program Management and top-level institutional arrangement at MoD for this initiative. Recent and historic global efforts to engage with startups and innovators in various fields, especially defence are summarized in **ANNEXURE C**.

## Objectives, Functions, and Activities of DIO-iDEX

The establishment of Defence Innovation Fund (DIF) and iDEX is aimed at creation of an ecosystem to foster innovation and technology development in Defence and Aerospace by engaging Industries including MSMEs, start-ups, individual innovators, R&D institutes and academia and provide them grants/funding and other support to carry out R&D development which has good potential for future adoption for Indian defence and aerospace needs.

# 2

The **core objectives** of setting up the Defence Innovation Fund are to:

- 1. Facilitate** rapid development of new, indigenized, and innovative technologies for the Indian defence and aerospace sector, to meet needs for these sectors in shorter timelines
- 2. Create** a culture of engagement with innovative startups, to encourage co-creation for defence and aerospace
- 3. Empower** a culture of technology co-creation and co-innovation within the defence and aerospace sectors

Adoption of innovation requires execution of **three critical functions**:

- **Co-Innovation/co-creation**<sup>5</sup> - Discovery and exploration of existing technologies, or development of relevant technologies
- **Piloting** of candidate technologies in important platforms, with quick feedback to the innovators
- **Indigenization** of various defence and aerospace related platforms being manufactured in the country based on ToT

The iDEX structure will need to perform all these three functions, in partnership with other competent stakeholders. iDEX will function as the executive arm of DIO, carrying out all the required activities.

To execute the above functions, the iDEX team will need to undertake these **activities** :-

- a Setting up and managing of the iDEX network in form of Partner Incubators (PIs).
- b Communicate with innovators/startups through Partner Incubators regarding defence and aerospace needs.
- c Organizing various challenges/hackathons to shortlist potential technologies for defence and aerospace use.
- d Evaluate technologies and products coming from innovators/startups in terms of their utility and impact on the Indian defence and aerospace setup.
- e Enable and fund pilots, using innovation funds dedicated to the purpose.
- f Interface with the military (Army/Navy/Airforce) top brass about key innovative technologies and encourage their adoption into the defence establishment with suitable assistance financial if required).
- g Facilitate scale-up, indigenization and integration in manufacturing facilities for successfully piloted technologies.

The Defence Innovation Organization (DIO) with its iDEX team will enable creation of channels for innovators to engage and interact with the Indian defence production industry. The long-term effect to be realized by the group is establishment of a culture, where enlisting the effort of innovators by the Indian military is commonplace and frequent.

5 "Co-Creation Experiences: The next Practice in Value Creation," 2004, <http://onlinelibrary.wiley.com/doi/10.1002/dir.20015/full>.

## Pattern of Engagement

It is intended to create a 'corporate VC' for Indian defence needs. iDEX would be empowered to run challenges, hackathons, and several month-long accelerators that help the Services co-create technologies with innovators. Furthermore, iDEX will connect innovators to the different military entities that absorb technologies, to enable co-creation and co-innovation.

To achieve the above stated objectives, it is envisaged to engage with existing and create new Defence Innovation Hubs (DIHs) and Partner Incubators (PIs) where innovators can get information about needs and feedback from the services directly and create solutions for India's major defence platforms. This structure is also geared towards attracting more innovators to work for the defence sector in India. At the other end, this will enable the military to understand to concept of "Fail Fast and Recover Faster" in the technology domain and use it to its own benefit. With this paradigm, the military will be able to work with and incorporate smaller and faster moving entities in the defence domain.

## Implementation Methodology

iDEX will be funded and managed by a 'Defence Innovation Organisation (DIO)' formed as a 'not for profit' company as per Section 8 of the Companies Act 2013 for this purpose. The constitution of DIO is described in **Annexure A**.

The modalities of implementation of DIF will be managed by a specialized team known as the Innovation for Defence Excellence (iDEX) within the DIO. DIO will provide high level policy guidance to iDEX. iDEX will have functional autonomy. The CEO of iDEX will be selected and recruited by the DIO and will be a professional person of sound technical, scientific and engineering background with divergent knowledge and experience in innovation and research. CEO of iDEX would also be CEO of DIO thereby providing the linkage between the high level policy guidance given by DIO and its implementation in a professional manner through iDEX.



# 3



# 4

This iDEX team would have the following composition:

**TECH EXPERTS**

The iDEX will create a roster of experts in core areas and engage them as per the requirement of Defence Innovation Hubs (DIHs) and Partner Incubators (PIs)

**TECH DEPLOYMENT EXPERTS**

Deployment of technologies is a growing discipline, with individuals who understand the dynamics of integrating tech in complex institutions and environments. These will include system integrators, user interface experts, design experts, etc.

**INNOVATION STAKEHOLDERS**

Co-creation and adoption of innovation is now an advanced discipline and requires specialized skills. Experts with these skills will be an integral part of the team, to be able to successfully connect tech. innovators and users in the armed forces.

While iDEX will lead the overall effort to create an innovation ecosystem in the country, each Defence Innovation Hubs (DIHs) and Partner Incubators (PI) would be independent financial viable unit functioning with the help of assistance provided by DIO under the guidance of iDEX. Through the network of Defence Innovation Hubs (DIHs) and Partner Incubators (PIs) throughout the country, the iDEX will underpin an ecosystem of defence tech. and innovation stakeholders.

# 5

## Funding of DIO

The DIO has been formed with a nominal capital under Sec 8 of the Companies Act by the two founder members i.e., HAL & BEL. It is proposed that other Defence PSUs will also be encouraged to join the DIO.

DIO will also have an initial corpus fund which will be utilized for funding iDEX projects.

## The funding for DIO will come from:

### 5.1 Initial Contribution from HAL and BEL

The corpus fund raised by HAL and BEL for DIO is presently conceived as Rs. 100 Crores, Rs. 50 Crores each from HAL and BEL. Over and above, the corpus fund may be increased subsequently depending upon the requirements and external donors'/ contributors' interest through crowd funding. HAL & BEL being founder members will contribute to the initial corpus fund of Rs 50 crores to start with.

### 5.2 Contribution from Defence PSUs

All Defence PSUs, namely HAL, BEL, BEML, BDL, MIDHANI, MDL, GRSE, GSL, HSL shall be encouraged to participate in the initiatives of iDEX through DIO. It is proposed that the DPSUs will be required to contribute an amount of 2% of their net profits to DIO for creating the innovation ecosystem in the country.

### 5.3 CSR Funds

Under guidelines for CSR, CSR funds can be used for eligible Incubators. Defence PSUs shall earmark 25% of their CSR funds for supporting iDEX in the country.

### 5.4 Funds from other PSUs/Government agencies/Departments

Several technologies developed in defence and aerospace have dual applications, both in Defence/Aerospace sector and/or in civil/commercial sectors. To name a few, Gallium Nitride products, AI applications, UAVs are such technologies. It is expected that other PSUs/Government agencies/Departments may be interested in taking up development of such technologies. iDEX may approach such other PSUs/Government agencies/Government Departments to join iDEX initiative as long as such initiatives are within the broad mandate of iDEX. Such funds received would be through DIO.

### 5.5 Allocation of Funds by Ministry of Defence

Ministry of Defence may release funds to DIO. MoD if it is satisfied that such funding is required in furtherance of the objectives of Defence Production. Such funding from Government will be based on a request from iDEX/DIO and after due appraisal by MoD and approval of Competent Authority, on a case to case basis.

As each Defence Innovation Hubs (DIHs) and Partner Incubators (PIs) and each project will require different amounts of assistance in terms of time and funds, the exact amount and duration of funding will be decided on a case by case basis. This funding will be used only for piloting / prototyping and not for equity purchase.

## 6

## IPR Management

- 6.1. The ownership of IPR generated under the program shall be owned by the company/institution/individual innovators who develop the IPR.
- 6.2. The Government may also put restrictions on transfer/licensing of technology/IPR developed under the program on considerations of national security or other strategic reasons.
- 6.3. Government will have Government Purpose Rights (GPRs) which will be non-exclusive, non-transferable irrevocable license to use the intellectual property for internal consumption or manufacture. The Government may use this right to manufacture either directly or through sub-contractor. The Government shall be liable to pay license fee/ royalty fee for use of GPRs in intellectual property/technology/product. A royalty up to 2% on each manufactured unit with a cap on total maximum royalty payable will be included in the contract with innovator, if Government or its sub-contractor uses the intellectual property generated for defence manufacturing. The cap on total maximum royalty payable to the innovator shall be decided on a case-to-case basis.
- 6.4. The Government shall have 'March-In' rights for all items covered under its GPRs for reasons of national security and other strategic reasons. 'March-In' Rights shall include the right to work the patent, either by itself or by another entity on behalf of the Government, in cases where (i) the company/institution fails to work the patent on its own within a specified and reasonable period of time (ii) the effective management and control of the company/institution is taken over by a foreign company without the approval of the Government. The march in rights of the Government shall be subject to the payment of acquisition cost/licence fee/ royalty fee by the Government or the concerned production agency as per the terms stated in preceding paragraph.
- 6.5. The ownership of any rights by the contractor (entity receiving grants) does not include an absolute right to transfer of any software, product or documentation; and such transfer, including export thereof, shall continue to be governed by and be subjected to the export policy, export guidelines and all applicable laws, rules, regulations, orders and the instruction of the Government of India. Transfers and exports which require prior and explicit approval of the Ministry of Defence would require such approval to be taken.

- 6.6. In case of collaborative project, the ownership rights in the IP generated under project, upon dissolution of the collaboration, shall vest amongst the partners as per their agreement on the subject, without Government rights being adversely affected in any manner.
- 6.7. The company/institution/innovator (entity receiving support) shall be responsible for protecting and maintaining the IPs generated in the project.
- 6.8. The Government and the company/institution/innovator shall set aside a certain amount of royalty or the licence fee, payable by the government for utilization by the DIO in order to keep a track of the production out of the IPRs generated in the project. This royalty will be finalized on case to case basis and will be part of contract with innovator.
- 6.9. Export control regulations of Ministry of Defence will apply to the export of technology or product developed in the project.

## Utilisation Certificate & Accounts

The entity receiving grant under this scheme will be required to maintain proper accounts and submit Utilisation Certificate, which shall be subject to verification/ audit by the DIO appointed agency.



## Activities which cannot be funded

1. Cost overruns:  
The entity shall bear the additional cost in case of cost overruns

2. Cost of land and buildings

3. Writing of books or reports or collection of statistics or service

4. Establishment of new R&D centers

5. Interest

6. Bad Debts

7. Contributions or donations

8. Fines and penalties

9. Advocacy and business development

10. Loss of other contracts

11. Expenditure incurred by applicant before the approval of the project

12. Re-financing

13. Entertainment / Alcoholic beverages



# ANNEXURE A

## 1. Constitution of the DIO

[a]	Secretary (Defence Production)	:	Chairman
[b]	CMD, HAL	:	Member
[c]	CMD, BEL	:	Member
[d]	Mission Director, Atal Innovation Mission/NITI Aayog	:	Member
[e]	CEO, iDEX	:	CEO, DIO

The main functions of the DIO will be:

- Receive periodic reports from iDEX team on the projects.
- Provide high level policy guidance regarding the effort's direction and execution.

Furthermore, advisory council will be constituted for annual high-level policy guidance and oversight having the below members.

[a]	Secretary (R&D)	:	Member
[b]	Secretary (Def Fin)	:	Member
[c]	Additional Secretary (Defence)	:	Member
[d]	VCOAS	:	Member
[e]	VCAS	:	Member
[f]	VCNS	:	Member
[g]	CISC	:	Member
[h]	Representative, Other DPSUs/OFB	:	Member
[i]	Representative, Dept of Science & Technology	:	Member
[j]	Representative, DIPP	:	Member

## 2. Role of SHQs & DPSU's

SHQs & DPSU's will play the primary role in identifying potential topics, problem statement/ project definition in a suitable format devised by the iDEX team. This will be a regular iterative process between the bodies with iDEX acting as the translator between the SHQs & DPSUs and the Indian innovation ecosystem.

### 3. iDEX Model - Funding Innovation using Corp VC model

Corporate Venture Capital (VC) is a recent structure where large corporates engage with small startups and innovators to improve their own products and services. More than just products, these corporates also forsake their hierarchical structure to get the benefits of flat structures of startup culture. These projects are financed by innovation funds set aside by the companies, accepting higher risk.

The iDEX is envisaged as a 'corporate VC<sup>6</sup>' for Indian Defence. VCs don't just invest in companies, but also nurture them with connections, advice and handholding, to help them meet their customers' needs and expand their markets. India's defence PSUs would pool and put aside resources to productise innovations. These funds would be assigned to and controlled by iDEX, which would have complete operational independence, but receive frequent guidance from the PSUs and Services. In India, international companies have run accelerator programs and corporate VCs with incubators to tap Indian talent in technologies. iDEX would learn from such leading-edge practices and run accelerator programs to promote innovation for defence needs.

Independent Defence Innovation Hubs (DIHs) and Partner Incubators(PIs): iDEX will work with India's existing innovation such as CODISSIA<sup>7</sup>, T-Hub<sup>8</sup> (Hyderabad), FORGE<sup>9</sup> (Coimbatore), SINE IIT Bombay<sup>10</sup>, IIM Ahmedabad's CIIE<sup>11</sup>, IIT Delhi FIIT<sup>12</sup> and IITM Incubation cell (IITMIC)<sup>13</sup> would help in discovery and exploration of MSMEs, startups, performing the function of co-creation. iDEX would work with these hubs closely, tracking upcoming startups and innovators, and investing in the latter opportunistically, from the iDEX Fund.

iDEX will also engage with existing key players in the defence sphere like Defence PSUs and private sector to test pilots on existing platforms. These will act as the accretion points for innovators/startups with technologies and products for the defence sector. **A mechanism will be established to create a platform for knowledge sharing between incubators/startups and various DPSUs/ OFB to promote domestic manufacturing by helping/ handholding the startups.**

6 "Corporate Venture Capital," 2018, [https://en.wikipedia.org/wiki/Corporate\\_venture\\_capital](https://en.wikipedia.org/wiki/Corporate_venture_capital).

7 "CODISSIA," 2018, <https://www.codissia.com/>

8 "T - Hub," 2018, <https://t-hub.co/>.

9 "Forge Accelerator," 2018, <http://www.forgeforward.in/>.

10 "SINE IIT Bombay," 2018, <http://sineiitb.org/sine/home/>.

11 "CIIE, IIM Ahemdabad," 2018, <http://www.ciie.co/>.

12 "FIIT, IIT Delhi," 2018, <https://fitt-iitd.in/>

13 "IITM Incubation Cell (IITMIC)," 2018, <http://www.incubation.iitm.ac.in/home>

## ANNEXURE A

### 4. iDEX - Culture and Leadership

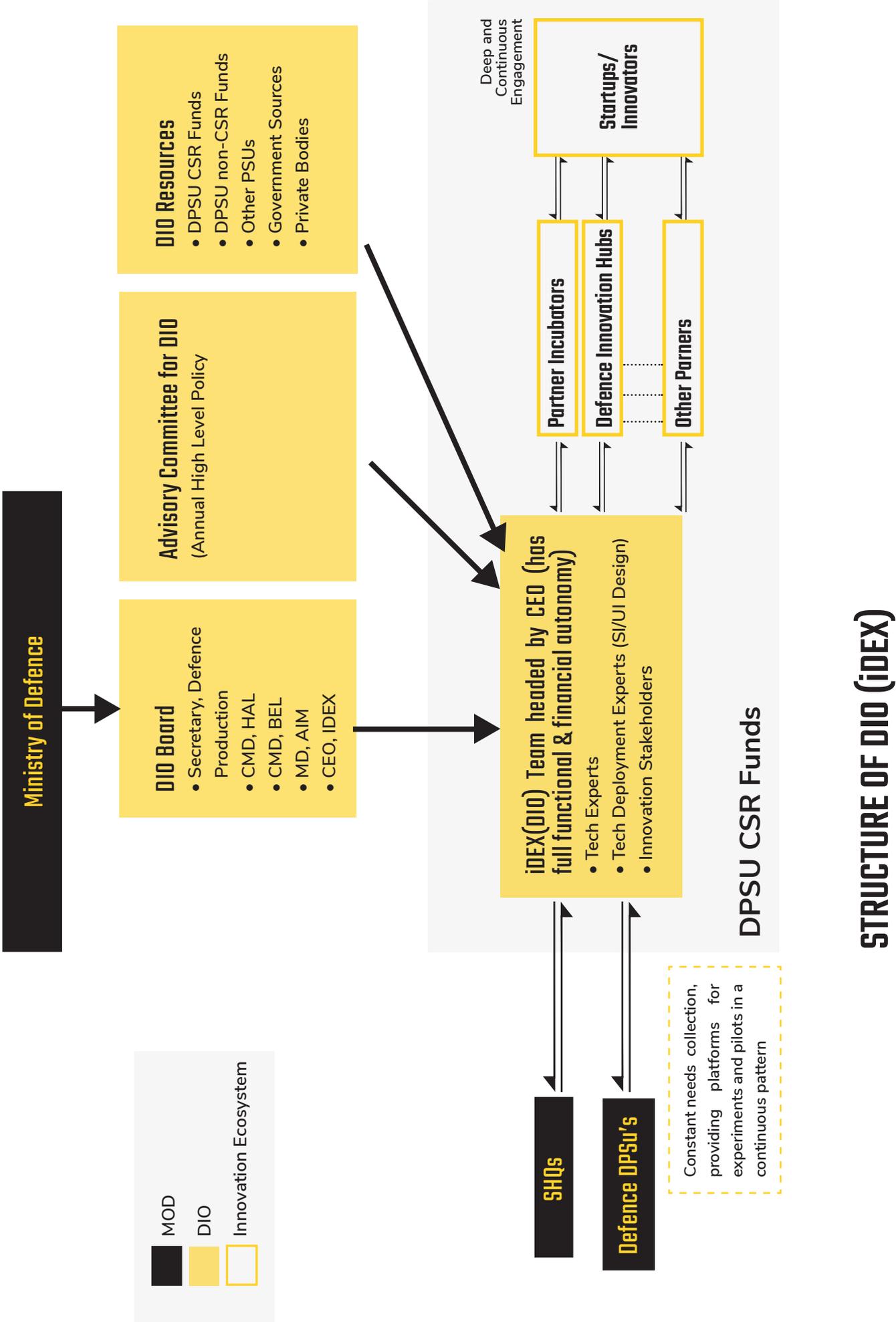
It is important to point out the differentiating factor of iDEX, in terms of the significant cultural and leadership paradigm shift that will make it work effectively. iDEX will have to work with minimal hierarchical control, embodying a flat structure and fostering a collaborative culture amongst the various stakeholders.

The Defence Innovation Hubs (DIHs) and Partner Incubators (PIs) would have to be given suitable operational autonomy to enable the deployment of defence innovation in a timely manner. This autonomy will also allow for the “Fail Fast, Recover Faster” policy - engage in multiple experiments, trying out existing and emerging platforms. Failures from these will be identified and weeded out early in the cycle, winnowing the successful pilots towards faster scaling up.

This attitude will only be established by visionary leadership for DIO (iDEX). The leaders of iDEX will need to have a fiercely independent mindset with the willingness to take on rigid bureaucracies to keep true to the vision of iDEX's role in making India's defence production establishment self-sufficient. They will need core technology adoption/commercialization experience from across sectors.

Direct access and support from the MoD will be crucial for taking on high-return risky projects which require extensive discretion in decision making. Finally, the leaders will need to work with a startup mindset, initiating multiple pilot projects early and shutting down the failures without hesitation.

# ANNEXURE B



- MOD
- DIO
- Innovation Ecosystem

## ANNEXURE C

### Recent and historic international efforts to engage with startups and innovators

The concept of a small team, with external support, moving rapid for technological advancement and establishment is not a new one. There are many successful examples of such enterprises globally.

The most recent and relevant defence related illustration of this conceptual framework can be found in the United States of America. The US Secretary of Defence in 2015 realized the dangerous trend of commercial technology severely out-pacing the military and established the **Defence Innovation Unit experimental (DIUx)**<sup>14</sup> in the Silicon Valley to counter this. While the initial efforts of this organization were less than spectacular, they were able to adopt the Silicon Valley approach of “Fail fast and recover faster”. Learning from their initial mistakes, this small outfit, headed by a small group of technologists has gone on to give the US military 12 viable projects including autonomous indoor drones to support Special Forces, cyber security software and a novel way for soldiers to communicate over radio without loss of surrounding awareness. The group is known for cutting through the meeting culture of the bureaucracy, having a direct link with the top brass of the US military and having a favourable reputation in the Silicon Valley landscape.

Israel is another prime example of the entrepreneurship model in the defence establishment. An entire defence startup ecosystem exists in the country with the government, the military and the various defence companies and startups being stakeholders of the system. The three largest industrial entities in this ecosystem are the government-owned **Israeli Aerospace Industry**<sup>15</sup>, **Israeli Military Industries**<sup>16</sup> and the **Rafael Arms Development Authority**<sup>17</sup>. The **Maf’at**<sup>18</sup>, which is a joint

14 “DIUx,” 2018, <https://www.diux.mil/>.

15 “Israeli Aerospace Industry,” 2018, <http://www.iai.co.il/2013/22031-en/homepage.aspx>.

16 “Israeli Military Industry,” 2018, <http://www.imisystems.com/>.

17 “Rafael Arms Development Authority,” 2006, <http://www.internationalaerospaceindia.com/2006/septem/internationalaerospaceindia6.pdf>.

18 “Maf’at,” 2011, <http://www.israelDefence.co.il/en/content/superpowers'-playing-field>.

administrative body of the **Israeli Ministry of Defence**<sup>19</sup> and **Israel Defence Forces**<sup>20</sup> coordinates between the Israeli MoD, the IDF and the military industries and startups. Israel also has the **Yozma**<sup>21</sup> program, which is a fund of funds to invest in local venture capital funds. The Israeli Defence Forces (IDF) actively encourages innovation in its units. Military veterans of the IDF use their acquired experience to launch their own technology start-ups for defence sector. This essentially form “a feedback loop” in the entire Israeli defence sector.

Two prime examples of IDF divisions known for innovation are -

**Lotem**<sup>22</sup>, which is the IDF’s largest technological unit and provides command and control (C2) systems for the armed forces.

**Unit 8200**<sup>23</sup>, which provides cybersecurity and intelligence services to the IDF and whose alumni have launched so many startups, that the unit is nicknamed “the startup machine”.

Many defence startups, led by the veterans of these units have thrived and innovated in the Israeli defence ecosystem. Examples include **Team8**<sup>24</sup>, **Elbit Systems**<sup>25</sup>, **mPrest**<sup>26</sup>, **Indegy**<sup>27</sup>, etc.

Other countries are also wising up to this approach of including small to medium scale innovation in the military industrial complex. **The European Defence Action Plan, 2016**<sup>28</sup> lays a sharp focus on engagement with and investment in SME’s, startups and midcaps for the defence industry.

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- 19 “Israeli Ministry of Defence,” 2018, <http://www.mod.gov.il/English/Pages/default.aspx>.
- 20 “Israeli Defence Forces,” 2018, <https://www.idf.il/en/>.
- 21 “Yozma,” 1993, <http://www.yozma.com/overview/>.
- 22 “Lotem,” 2017, <https://www.haaretz.com/israel-news/tiny-idf-unit-is-brains-behind-israeli-army-artificial-intelligence-1.5442911>.
- 23 “Unit 8200,” 2016, <https://www.forbes.com/sites/richardbehar/2016/05/11/in-side-israels-secret-startup-machine/#46a913301a51>.
- 24 “Team8,” 2018, <https://www.team8.vc/>.
- 25 “Elbit Systems,” 2018, <http://elbitsystems.com/>.
- 26 “mPrest,” 2018, <https://www.mprest.com/>.
- 27 “Indegy,” 2018, <https://www.indegy.com/company/>.
- 28 “European Defence Action Plan,” 2016, [http://europa.eu/rapid/press-release\\_IP-16-4088\\_en.htm](http://europa.eu/rapid/press-release_IP-16-4088_en.htm).

Historically, major defence innovations have been made by small, empowered teams. In 1940, the President of the United States received a plan for National Defence Research Council, which led to the creation of the **MIT Rad Lab**<sup>29</sup>. This organization was a small research outfit with government support looking into development of technologies for detection of aircraft and ships. Over a period of the next five years, the Rad Lab developed and inducted into the US armed forces, ground breaking technologies like airborne bombing radars, shipboard search radars, harbor and coastal defence radars, gun-laying radars, ground-controlled approach radars for aircraft blind landing, interrogate-friend-or-foe beacon systems, and the long-range navigation (LORAN) system. The outfit is especially credited for the creation of the microwave early-warning (MEW) radars, which saved London from the V-1 threat and the air-to-surface vessel (ASV) radars, which helped protect Allied shipping from the U-boat menace.

The Xerox Corporation in 1970 established a smaller separate innovation center in Palo Alto, California with the aim of revitalizing the company's product line. This **Xerox PARC**<sup>30</sup>, as it came to be known became the birthplace of many key modern computing concepts and elements like the GUI with windows and icons, incorporating the mouse as an input device for the GUI, ethernet, the concept of objective oriented programming, etc. In fact, an indirect measure of its achievements came in the form of the number of its employees that were poached by companies like Apple. PARC now functions as a fully formed subsidiary of the Xerox Corporation with about four decades of innovations under its belt.

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29 "MIT Radiation Laboratory," 1990, <https://www.ll.mit.edu/about/History/RadLab.html>.

30 "Xerox PARC," 2018, <http://www.parc.com/about/>.

**MINISTRY OF DEFENCE**  
**DEPT. OF DEFENCE PRODUCTION**  
**DTE OF PLANNING & COORDINATION**  
**DP(PLG-V)**

\*\*\*

**Innovations for Defence Excellence (iDEX): Re-constitution of the Board of Defence Innovation Organisation (DIO)**

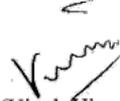
Refer letter from BEL, dated 08 June 2018 regarding expansion cum re-constitution of the Board of Defence Innovation Organisation.

2. It is intimated that Hon'ble Raksha Mantri has approved the reconstitution of the board of Defence Innovation Organisation to the following effect:

(i) Secretary (Defence Production)	: Dr. Ajay Kumar (Chairman)
(ii) CMD HAL	: Shri T Suvarna Raju (Member)
(iii) CMD BEL	: Shri MV Gowtama (Member)
(iv) Mission Director, Atal Innovation Mission (AIM)	: Shri R Ramanan (Member)
(v) CEO iDEX	: CEO DIO (To be decided)

3. It has also been decided that the current constitution of DIO, as envisaged in iDEX plan shall act as the **Advisory Committee for DIO in DDP**.

4. It is requested to take necessary action accordingly.

  
(Vivek Virmani)  
Planning Officer (G)  
Tele: 23792099

**DIO**

**Copy to :**

**CMD HAL**

**CMD BEL**

**MoD ID No. 1(5)/2018/DIHS/DP(Plg-V) dt 20 June 2018**

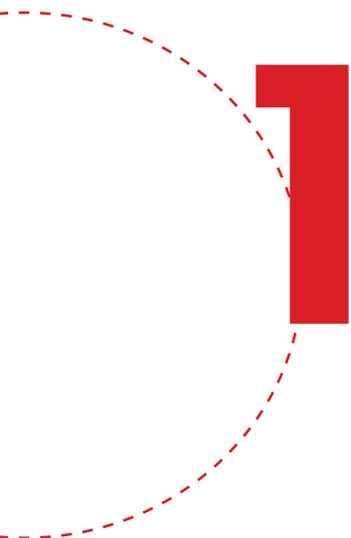
**END OF SECTION**



# **SPARK Framework**

**SUPPORT FOR PROTOTYPE AND RESEARCH**

**KICKSTART (IN DEFENCE) FRAMEWORK**



# 1

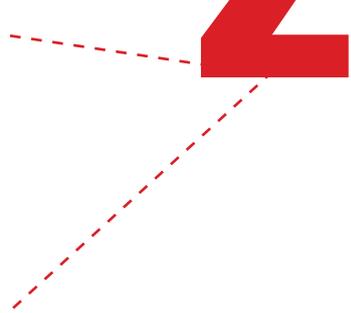
## Introduction

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The Support for Prototype and Research Kickstart (in Defence) framework by the Defence Innovation Organization – Innovations for Defence Excellence (under the aegis of the Ministry of Defence) in partnership with Atal Innovation Mission, is aimed at supporting Startups/MSMEs/Innovators to create prototypes and/or commercialize products/solutions in National Defence and Security.

The vision of this framework is two-fold:

- (a) help create functional prototypes of products/technologies relevant for national security (prototyping), and spur fast-moving innovation in the India defence sector;
- (b) help new tech products/technologies and a market and early customer (commercialization) in the form of the Indian Defence Establishment.



# 2

## Support Provided

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- a. The framework will call for proposals through challenges and other means to address specific technological needs of the Indian Defence Establishment. Applicants showing capability, intent, and promise to be able to produce functional prototypes or to productize existing technologies will be awarded maximum grants of up to Rs. 1.5 crores per applicant, strictly on a milestone basis and starting, in the form of 70% grant and 30% loan which will be released after acceptance of the project. While taking the projects forward from proof of concept to the prototype stage, project specific milestones would be laid out.

In case, any selected applicant fails to meet the designated milestones to the satisfaction of DIO, DIO reserves the right to cancel the grant award at time without having to justify its decision to the selected applicant. There will however be no claw back of the grant amount already given to the selected applicant. DIO would also look at models for channeling back the funds coming from successful developments to DIO for ploughing back funds to ensure financial sustainability of the process.

- b. Apart from financial aid, selected applicants will also be provided mentoring and acceleration support through iDEX partners. For each problem statement announced, no more than 6 applications will be finally selected for the grant and incubator support to start
- c. The exact amount and mode of each grant shall be decided on a case to case basis by a high-powered committee based on the application, as per the prevailing scheme. MoD and AIM reserve the right to modify the scheme as and when required, without prior notification. In special cases, if deemed necessary by the high-powered committee, the funding amount may be increased beyond the prescribed limit.

## Eligible expenditures for grant money under SPARK

Since the focus of the framework is to facilitate creating of prototypes and bringing of products/technologies to market (defence or otherwise), applicants will be encouraged to spend on:

- |                           |                      |
|---------------------------|----------------------|
| 1. Research & Development | 2. Prototyping       |
| 3. Pilot Implementation   | 4. Market Assessment |

Detailed fund utilization guidelines will be provided to the selected applicants.

## Eligibility for the support

1. Startups, as defined and recognized by Department of Industrial Policy Promotion (DIPP), Ministry of Commerce and Industry, Government of India.
2. 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.
3. Individual innovators are also encouraged to apply (research & academic institutions can use this category to apply).



# 5

## Application Process

Applicants will be required to provide the following information in an online application:

1. Full Details of a Single Point of Contact for the applying entity these are the full contact details of a single person who will act as the point of contact between iDEX and the applicant. We encourage that this person be a core member(founder/CEO) of the applicant entity (Startup/MSME).
2. Entity Details – these are the details of the Startup/MSME applying. Individuals Innovators do not have to fill these.
3. Proposal Details – these are the details of the proposal in response to the Defence India Startup Challenge problem statements/focus areas. Applicants must select the problem statement they are addressing, what amount of funding they want and provide technical and financial details of their proposal. This will include mentioning relevant patents and research papers by the applicant, if any, a detailed project report with the technical details of the product/technology they are proposing and how the applicant plans to deliver it, if selected. The applicants are also asked to provide a tentative business plan, which should detail the plan to manufacture the product/technology, as well as whether they have identified a separate civilian market for the product/technology, or a close variant thereof.

# 6

## Evaluation of Applications

The applications will be screened by a duly constituted high-powered committee of defence, technology, and innovation deployment experts for screening and selection of applications for the Defence India Startup Challenge.

Key parameters in selection of applications for the Defence India Startup Challenge

**The vision of SPARK is two-fold:**

(a) help create functional prototypes of products/ technologies relevant for national security (prototyping), this will also help build an ecosystem of fast-moving innovation in the Indian Defence Sector;

(b) help new deep-tech products and markets and early customers (commercialization) in the context of the Indian Defence Sector.

Accordingly, applications will be screened on the following criteria:

a) Potential for proposed prototype to meet existing Indian defence needs.

b) Potential to deploy an existing technology or patent to meet existing Indian defence needs.

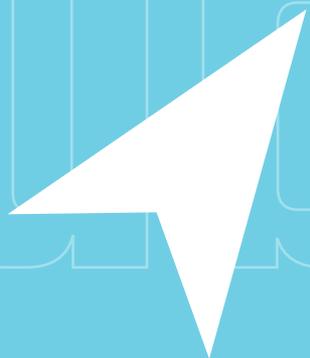
c) An additional but optional parameter will be whether the proposed prototype/product/ technology has the ability to reach alternative civilian markets also.

The exact criteria will differ for each individual challenge / problem statement and will be finalized by the duly constituted high powered selection committee for that challenge / problem statement.

**END OF SECTION**

Partner

newboat



Partner

newboat

# Partner Incubator Guidelines

# 1

## Introduction

---

The iDEX initiative aims to facilitate collaboration between Indian innovation ecosystem, the Defence establishment, corporate sector, academia, and incubators.

**The vision of the iDEX initiative is two-fold:**

**(a) help create functional prototypes of products/technologies relevant for national security (prototyping), and spur fast-moving innovation in the India defence sector;**

**(b) help new tech products/technologies find a market and early customer (commercialization) from the Indian Defence Establishment.**

**SPARK grants** have been envisaged under the iDEX initiative to support Indian innovators selected through the Defence India Startup Challenges (DISC) process to develop products to support the Indian Armed Forces.

# 2

## iDEX principles

---

**The iDEX initiative's core principles are as follows:**

### **CO-CREATING COMMERCIAL SOLUTIONS**

- Access to Top Technology Talent and their capabilities, covering individual innovators & researchers in Academia/Industry, startup founders, tech entrepreneurs (promoters), and MSMEs -collectively referred to as Startups;
- A managed innovation process of engaging Startups directly with the Defence services and Defence indigenous production entities to research, develop, apply and/or integrate innovative technologies and solutions addressing the defence needs;

- To achieve the twin objectives of 'Rapid Innovation at Lowest Cost' and 'Adoption of Commercial Technologies/Products to meet defence needs within the shortest time';
- Innovation Grant approach to funnel access to top technology talent to innovate for defence and to rapidly adapt commercial technologies / products to meet defence needs versus Production/Supplier Contract approach that is suited for reverse engineering to achieve indigenisation goals.

## **OPEN INNOVATION**

- To nurture the creation and adoption of Commercial Solutions is independent of and different from the conventional Defence funded research and development programs either at DRDO directly or indirectly at any of the premier IITs, IISc, NITs etc.;
- To ensure that the military needs are implemented not as 'sponsored projects' but as 'commercial solutions' that go on to become standardised technologies/products, which are ready for dual-use and become commercialised in defence and civilian sectors; Leveraging the existing assets & infrastructure (offered by R&D labs, Innovation centres of excellence, Rapid design & prototyping facilities), capabilities (skills & resources in program management offered by Partner Incubators), expertise (military officers engaged as Users, Operators, DPSU officials engaged as systems integrators etc.) in order to expedite the process and achieve fast-tracked outcomes through iDEX;
- Open Innovation within a framework of a rigorously managed process, balancing Control with the flexibility to rapidly explore several possibilities of innovative solutions to address the needs of the military.

## 3

## Collaborative Product Development

### **Accelerator program, Startup support, Grantee reporting and other responsibilities**

In the spirit of collaboration and in good faith, critical funds required are being provided under SPARK to Indian innovators with potential to develop products for Indian defence. SPARK Grantees are expected to contribute equally (“matching contribution”) to the product development costs, and partner incubators shall partner with iDEX to oversee the development of products for Armed Services. It is expected that iDEX will partner with partner incubators for handholding and supporting each of the SPARK grantees.

Grantees shall be connected with an iDEX Partner Incubator (PI), who shall provide technology and business mentoring, connections to Nodal agencies (if any), and handholding for the grantees to eventually compete for defence business. These PIs shall also be assisting iDEX in grant management, monitoring and reporting. Grantees should endeavour to have regular interactions with PIs.

PIs may undertake a matching process to determine which innovators need what kinds of support, as part of orientation. However, PIs shall accept the due diligence and selection process undertaken by iDEX High Powered Selection Committees (HPSCs) that include senior uniformed officers of the armed services and DPSUs, and shall not put SPARK winners through an additional filter or screening process.

The milestones for each grant winner have been mutually established between iDEX and the grant winners, based on the inputs of the nodal agencies. The partner incubators shall be collaborating with iDEX and nodal agencies to monitor and determine progress on the milestones being achieved by the winners.

For most cases, the funds will shall be disbursed directly from DIO-iDEX to the grant winners. In exceptional cases of SPARK winners being supported by iDEX under the pre-incubation model ("**Entrepreneur-in-residence**"), the grants may be disbursed by the incubator, in consultation with iDEX- the pertinent guidelines shall be drawn up as and when such needs emerge.

The Acceleration Program Budget approved as per the guidelines for iDEX Partner Incubators issued by DIO (MoD), is up to Rs. 40 Lakhs for each run of the accelerator programs, expected to be of a duration of 9-12 months. These grants are provided to designated Technology Business Incubators by defence PSUs through their CSR programs.

PIs shall assist iDEX in managing SPARK grants and monitor the progress and development of the SPARK grantees continually, to ensure a product and commercial orientation. It is envisaged that the milestone-linked grants of the SPARK grantees shall be disbursed upon receiving a favourable progress report from the partner incubators.

# 4

## Expectations from Partner Incubators

It is expected that the iDEX partner incubators shall endeavour to groom and support companies from the DISC process as well as other pipelines, in the pursuit of the broader national objective stated above. The expectations from partner incubators are as follows:

- It is estimated that each incubator shall run one accelerator per year. Incubators are expected to devote iDEX resources to supporting defence-related startups, identified from SPARK or other means.

### **iDEX Startup Incubation Services - iDEX Startups incubated = Approximately 8 per cohort**

- Mentoring for Startups covering technology, design, engineering, business strategy, commercial & market planning, financial/investments planning etc.
- Monitoring of milestones, and Reporting of progress/performance to iDEX team.
- Overall program administration in accordance to the operating guidelines of iDEX.
- Facilitation of access to test facilities, certification labs, technical expertise within the Indian defence establishment.

### **iDEX Program Management, Operations Services and Outreach Events**

- Planning and implementation responsibility across all the stages from problem curation & launch of challenges, outreach & sourcing of applications for challenges, coordination of HPSC screening, selection and grant disbursement process, event management for effective execution of hackathons, bootcamps, demo days etc., as discussed with the iDEX team time to time.

- Given that the PIs have institutionalized expertise and capabilities in the broader scope of fostering technology led innovation and entrepreneurship, there is merit in not duplicating those capacities within DIO, and to leverage those assets and capacities from time to time. Therefore, in addition to the above scope of services rendered under the broader umbrella of iDEX Accelerator programs, it is also envisaged that the PIs be engaged in taking up the responsibility of the planning and execution of additional services enumerated below:

[1] Design and development of websites, databases, communication materials, branding and creative design for iDEX logos and other related properties, marketing and promotional materials in print/digital formats, and other deliverables as may be necessary for iDEX.

[2] Development and maintenance of IT systems to create an integrated digital platform for managing the open innovation process, end to end bringing together diverse agencies and stakeholders involved in the iDEX ecosystem.

[3] Organizing events on behalf of DIO, which may typically not come under the set of events organized within the context of the iDEX Accelerator programs.

[4] Managing specific projects independently but on behalf of DIO and/ or supporting the implementation of projects directly managed by DIO with staff augmentation, with manpower resources from employees or consultants of the PI.

[5] Other assignments that may be offered to the PIs, which may not come under the scope of services defined under the iDEX Accelerator program.

In the case of these additional scope of services, the PIs shall be allowed to utilize the funds from the grants offered by the DPSUs to meet the expenses incurred in the process of offering these services to the DIO. These expenses shall include the payments made by the PI to those suppliers, vendors, consultants, or other third-parties whosoever is identified by the PI, but with the implicit assumption that the overall responsibility of managing the commercial transactions and the deliverables lies with the PI. All such expenses shall have to be presented by the PI for prior approval by the CEO of DIO, indicating the budgeted estimates along with copies of proforma invoices or other relevant documents including self-certified utilization certificate. The PIs shall be allowed to state the utilization towards these expenses under a separate head called, iDEX Project Management Unit (PMU) Support Services.

In order to defray the funded incubators' costs systematically, the following heads of expenses can be used:

## Resources & Services

### Team resources/manpower:

- The incubators's best available managers/mentors to be utilized for supporting SPARK grantees.
- It is expected that each partner incubator shall devote at least 2 staff with primary responsibility to iDEX for the duration of the accelerator program, with at least one at an incubation manager level or higher.

# 1.

### Co-working Facilities & Infra

- Each SPARK Grantee selected for incubation in a partner incubator shall get up to 4 dedicated Coworking Seats during the Acceleration stage of the program for a maximum duration of 9 months, as required by the SPARK Grantees;
- To include access to high-speed internet, board/conference/meeting rooms, etc.;

# 2.

## Indicative expense heads and details

**CEO:** Rs 24 lakhs per annum

**Incubation Vice-president:** Rs 20 lakhs pa

**Incubation Manager:** Rs 12 lakhs pa

**Associate:** Rs 6 lakh pa

Time of staff to be accounted for iDEX purpose on a weekly basis, assuming 40 hours per work week (For eg, for the CEO spending 25% of time on iDEX, expense Rs 50,000 per month from the grant. For an incubation manager spending all of the time on iDEX, account for Rs 1 lakh per month)

Manpower costs attributed to iDEX activities to be limited to 25% of the total grant. This includes administrative and management expenses of partner incubators for the iDEX engagement.

**To be calculated at Rs 7000 per seat, per month, as per the requirement of the startups. In case of virtual incubation, 50% of this rate can be used to offset costs, with a limit of 4 team members per winner.**

**Co-working and Infra costs attributed to iDEX activities to be limited to 40% of the total grant.**

### Innovation/Prototyping Lab Resources

- Unlimited 16 (hours) \* 7 (days) access to all available Lab infra, equipment, tools, and resources.
- Prototyping Expenses in terms of consumables, supplies, power charges, repairs/spares and maintenance expenses etc. shall be billed on actuals basis.

### Hardware Prototyping/Tech Support Service

- Tech support in IoT, Digital Fabrication, Robotics/Automation, CAD, 3D Printing, Industrial Design, Electronics.

### Comprehensive Mentoring & Consulting Services

- Domain/Functional experts offer intensive Office Hours for the SPARK Grantees on key areas covering Tech, Design, Innovation, Product Manufacturing, Standards/ Certification, IP, etc.

**Any capital expenditure (new machines, etc) to be purchased only with the prior consent of the iDEX team.**

**Consumables utilised by SPARK grantees to be expensed on a verifiable, good faith basis.**

Specific mentorship requirements of any incubated SPARK grantee to be accommodated as best as possible. Mentors available to partner incubators shall provide their assistance to SPARK grantees without any remuneration. Any external mentors's time to be expensed at an indicative honorarium of Rs 2500 per hour, as per the need and approximate amount of time spent.

**It is expected that at least 40 mentoring sessions will be conducted. These can be for SPARK grantees directly incubated at the PI, or for other SPARK grantees at other PIs. In exceptional cases, mentoring can be provided to deserving non-SPARK aerospace and defence startups also.**

### Domestic Travel

Travel of incubation team, SPARK grantees, mentors and any associated personnel required for meeting iDEX objectives.

It is expected that travel and stay costs will be kept to the minimum required, balancing the objectives of safety, efficiency, and cost minimization. Only economy class fares to be used for all flights. All travel and stay vouchers to be retained. Travel costs attributed to iDEX activities to be limited to 15% of the total grant.

### Events

Any events conducted for iDEX or for specific requirements to be expensed on actuals basis with concurrence of iDEX team, with verifiable documentation preserved. It is expected that at least 5 outreach or similar events to promote innovation in aerospace and defence will be conducted during the period of the grant. Event costs attributed to iDEX activities to be limited to 20% of the total grant.

The partner incubators shall provide half-yearly utilisation certificates as per the above expense heads, calculating and reporting the costs and expenses incurred on a good faith basis. Additionally, a completion report shall be submitted at the end of each program.

Incubators that desire to undertake an expense not covered in the heads in the above table shall take prior clearance from the iDEX team.

Partner incubators shall not be charging SPARK Grantees any additional fees, rent, or expenses not covered in the table above, without the express consent of the iDEX team. This should include any expenses on quality assurance, verification, testing, etc.

Partner incubators are encouraged to facilitate or generate angel and VC investments in the SPARK grantees, however, incubators directly investing in the SPARK grantees shall not count SPARK grant or in-kind assistance as part of the investment, in any shape or form.

# 5

## The grants cannot be spent on the following heads:

- a) Repaying for existing/previous debt, financial hedging, security deposits, investment or other financial instruments
- b) Any capital investment in the incubator premises, equipment, or vehicles
- c) Excessive expenditure on travel, hospitality, or other expenditures not directly related to incubation of SPARK grantees.
- d) Any honorarium, professional services, consultancy, computer usage, data processing or any other services not directly relevant to a SPARK grantee's prototype/product development;
- e) Other expense heads or categories that may emerge in the future, if and when found to be irrelevant shall be communicated to the incubators, with the expectation that past expenses shall be reversed and any future expenses shall be avoided

## Withdrawal/End of grant

Partner incubators unwilling to engage further with DIO-iDEX at any stage of the grant process shall be required to provide a full accounting of the expenses incurred till the relevant date, and refund any remaining amount with them, along with a detailed justification for such a decision.

The decision of the iDEX CEO shall be final and binding on all SPARK grants. Any disputes shall be adjudicated in New Delhi.

# 6

END OF SECTION

Defence Innovation Hub



# Defence Innovation Hub Framework

## 1

## Introduction

The **Innovations for Defence Excellence (iDEX)** framework<sup>31</sup> was launched to create an ecosystem of innovation in the India defence establishment through funding, guidance, customer engagement and facilitation for the relevant stakeholders.

The iDEX framework aims to execute the 3 critical functions needed for adoption of innovation – co-creation, piloting and indigenization - by forging partnerships with competent stakeholders in the Indian innovation ecosystem. To this end, iDEX has already established a **framework** to create links with the top incubation centers in the country for supporting startups working in the defence domain. This has kick-started the setting up of the iDEX network in the country to build and support the defence innovation eco-system.

The iDEX framework also envisages providing funding for the setting up and managing of the iDEX network through the establishment of **Defence Innovation Hubs (DIHs)** in the country. The DIHs will be MSME-oriented, while still being capable of supporting startups as well as promoting collaborations between innovative startups and the established MSMEs.

## 2

## Who is eligible to apply for the DIH grant

The applicant should fulfill any one of the following conditions.

1. Any Central Government recognized Incubator including but not limited to -
  - a. Department of Science and Technology (DST) recognized Incubators<sup>32</sup>
  - b. Atal Innovation Mission, NITI Aayog created Atal Incubation Centers (AICs) and Established Incubation Centers (EICs)<sup>33</sup>
  - c. Ministry of MSME recognized incubators<sup>34</sup>

31 [http://www.makeinindiadefence.gov.in/admin/writereaddata/upload/files/Complete%20document%20on%20iDEX\\_1.pdf](http://www.makeinindiadefence.gov.in/admin/writereaddata/upload/files/Complete%20document%20on%20iDEX_1.pdf) accessed November 2018

32 <http://www.dst.gov.in/scientific-programmes/st-and-socio-economic-development/national-science-technology-entrepreneurship-development-board-nstedb> accessed November 2018

33 <http://aim.gov.in/what-is-an-incubator.php> accessed November 2018

34 <http://www.dcmsme.gov.in/schemes/SUPPORTFOREMDTI.html> accessed November 2018

2. Any other incubator recognized or funded through any Central government scheme.
3. The incubator located in districts mentioned in the list of SME clusters hosted by the Ministry of MSME in collaboration with UNIDO<sup>35</sup>.
4. Incubator/Hub promoted by local industry associations.

## Application Process

**1. Interested Hub applicant can send their proposals addressed to CEO,DIO.**

**2. The application for a DIH should include the following –**

**(a) A brief portfolio of the applicant including but not limited to**

- (i) Proof of Central government recognition.
- (ii) Brief description of the industrial cluster in the area, including any focus on manufacturing sectors such as automotive, chemical, forging and foundry, or similar sectors.
- (iii) No. of Startups/MSMEs incubated/supported till date, including full contact details of such cases (in the last 3 years).
- (iv) Activities undertaken for Defence related production.
- (v) List of Mentors associated detailing the nature of the relationship i.e. full-time, pro-bono, etc.
- (vi) Copies of the founding documents of the legal entity i.e. MoA, AoA, etc.

**(b) Detailed Project Report**

- (i) Business Plan for the DIH should invariably include
  - 1) Location Details and availability of infrastructure, both physical and otherwise and the value proposition.
  - 2) Details of the activities to be carried out by the DIH to build the innovation and domestic manufacturing eco-system to support the Indian defence establishment with timelines.

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35 <http://www.dcmsme.gov.in/clusters/clus/smelist.htm#clus> accessed November 2018



- 3) Details of the focus products/technologies and their value proposition. **The applicant needs to clearly spell out specific outcomes and commitments to be achieved by the Incubator/Hub, especially in respect of the development of new technologies and/or indigenization of imported products. A clearly justified value proposition for the proposed activities/items is also required.**
- 4) Broad qualitative and quantitative outcomes to be achieved and their timelines.
- 5) Governance Structure and institutional mechanisms.
- 6) Plan for sustainability of the DIH beyond the project period.

(ii) Budgetary breakup and ROI for the funds sought including

- 1) Detailed justification for the item wise costs i.e. budgetary quotations, etc. **The reasonability of the costs quoted in the proposal have to also be justified by the applicant in the proposal itself.**
- 2) Capital Budgeting Analysis including the ROI statement, Cash flow statement etc.
- 3) Break up of the tranches of the sought funds.

# 4

## Evaluation & Selection of applications

1. DIO will conduct the evaluation of all received applications for establishment of a DIH.
2. To support the evaluation of these applications, DIO will carry out the first round of evaluation of the applications and will also provide DIO with detailed comments on:-
  - a. DPR sent by the applicant and the contents as elaborated in Para 3.
  - b. Justification and comments on the value proposition for the proposed activities/items.
  - c. Reasonability of the prices and budgetary figures in the proposal.
  - d. A brief on the market reputation and standing of the applicant.
3. In case, CEO, DIO finds it necessary, the applications **could also be referred to a third-party agency/consultant for appraisal.**
4. The CEO, DIO will present the shortlisted applications and the appraisal report to the DIO board for final review and approval.
5. The DIO board will take a final decision on the application and will also approve the fund disbursement and milestone review schedule.

## Legal due-diligence and compliance

Once the DIO board selects the applicant, DIO will conduct a due diligence process on the selected applicant including a site visit and ask the applicant to provide the requisite documents before entering into a formal legally vetted agreement.



5

## Financial Support

1. Entities will be provided with funding limited to Rs. 20 crores by the Defence Innovation Organization (DIO) for setting up the DIHs, in a tranche-based manner. The tranches, on a case by case basis. Out of this, Rs 5 crore would be in the form of an interest bearing advance i.e. prevailing Prime Lending rate (PLR) for meeting the working capital needs.
2. The funding will be spread over a time period of 4 years with any interest generated on the grant money being counted as part of the grant itself.
3. The funding would **NOT** include expenses proposed for
  - a. Land & Buildings and related infrastructure..
4. There will be a limit of 15% of the total grant sought for the amount which can be spent on recurring expenses including manpower costs.
5. The funding would leverage and would be built on top of the existing funding being made available from other government sources like AIM etc. and would exclude such items.



6

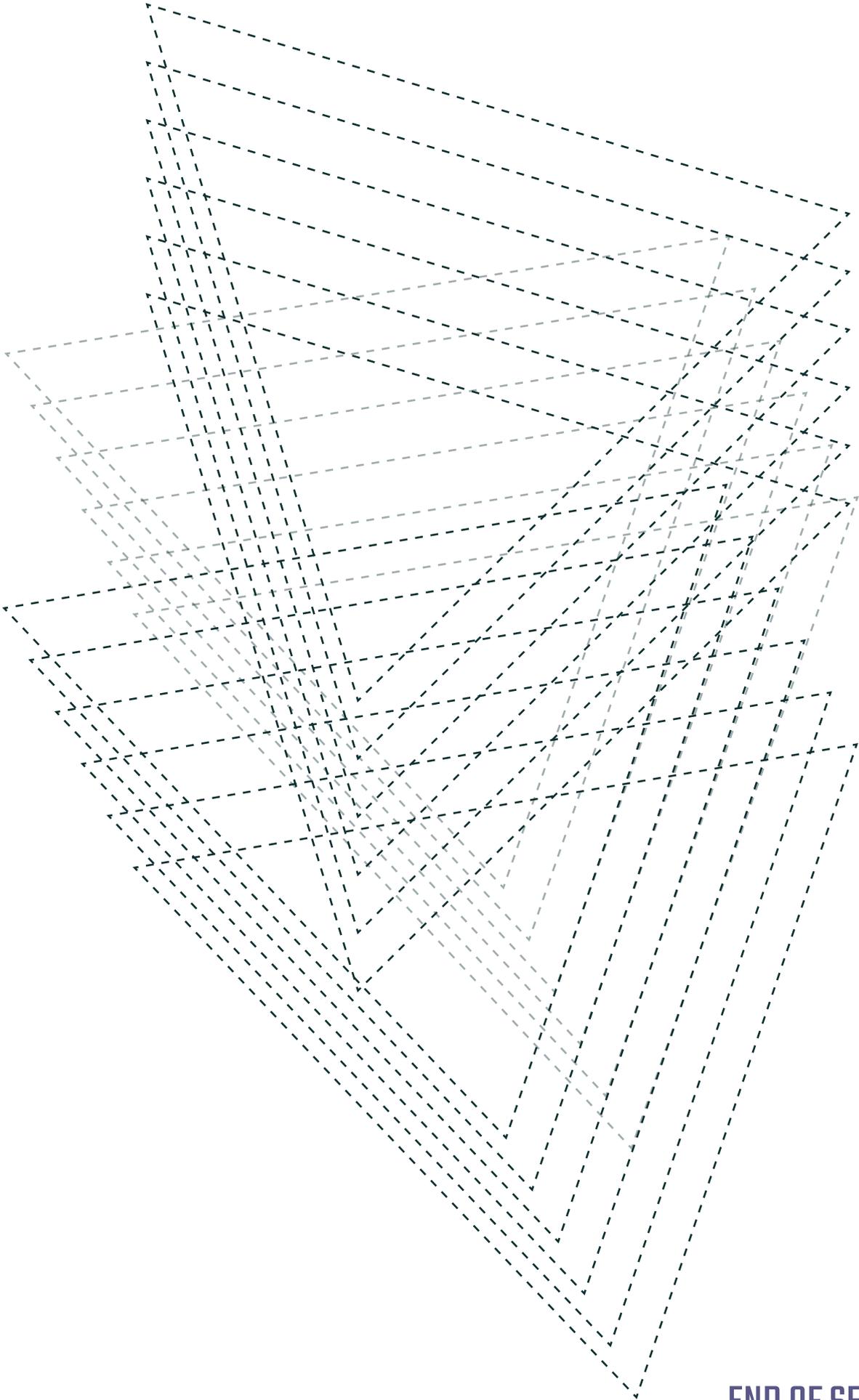


# 7

## Fund Disbursement

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1. The support to the selected DIH shall be considered as grant-in-aid, with the accounting and reporting standards as required for a government-funded project. The part of the support would be treated as advance as stipulated above and would be recovered during the duration of the project.
2. Once the due-diligence process has been completed, DIO will start disbursing the funds to the applicant as per the DIO board approved schedule.
3. The iDEX team will follow up and review the applicants progress at each tranche disbursement based on the milestones/outcomes as set in the contract.
4. DIO will always reserve the right to terminate support to any applicant if it feels that the applicant is not delivering as promised. Furthermore, DIO would be under no obligation to explain such a decision.
5. The decision to withdraw support will have to be approved by the DIO board.
6. State Government to be involved to supervise the project and to sort out related issues.
7. Independent Director(s) to be appointed in the Board / Committee of Defence Innovation Hubs (DIHs) and report to the DIO Board about the utilization of the funds, review of the projects and other related matters.



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**END OF SECTION**



# Grant Funding Guidelines

**GUIDELINES FOR DILIGENCE & VIABILITY FOR  
SPARK GRANTS**

On the basis of several emergent cases encountered in the process of reviewing the product development proposals submitted by the SPARK Grantees selected to receive financial support from DIO, it is recommended that a Product Management approach is practiced end-to-end. This approach gives us the opportunity to strike the right balance between extending adequate flexibility to innovators and exercising sufficient control to ensure diligence, fairness, and overall viability of the projects to achieve the desired outcomes.

## 1 Product Management approach to SPARK Grants Implementation

The success of Open Innovation depends chiefly on the program being implemented with a VC mindset, which essentially is oriented around creating a framework of expectations, guidelines, and metrics to deftly foresee, mitigate, and manage risks inherent in converting novel technologies and new products into commercially viable solutions and profitable businesses.

In the limited context of Corporate Open Innovation programs, this is made practical by bringing a **Product Management** approach to managing both internal innovators or intrapreneurs and external innovators or entrepreneurs, who are given with grants, highly valued/proprietary corporate resources, access to external networks/ecosystem etc. Our experience shows that usually such programs get implemented on the lines of '**Sponsored or Funded Projects**' under the framework of Project/Financial Management within the purview of the Procurement department.

In the specific context of accelerating commercial launch of technologies and products to achieve the desired business goals, the definition of milestones in terms of specific goals and deliverables to be achieved by the startups, are influenced primarily by the desired commercial outcomes - outcomes and metrics related to time-to-market, competitive advantages of product, cost-effective exploration of multiple alternative solutions/designs, rapid iteration to continuously test and calibrate the product designs etc. matter the most.

The startups are given the flexibility to operate with autonomy, as long as the decisions made by them are backed by sound implementation, indicating measurable progress towards these desired metrics and outcomes. Achieving commercial outcomes and market success through the program is given more importance than completing a predefined set of activities according to a statement of work within pre-approved budget for estimated costs but in effect failing to achieve the desired business objectives.

Even though each of these startups have higher risk to start with, the Innovation Portfolio approach allows the corporate to diversify the risk across several startup engagements simultaneously. Over the course of the program, it has the flexibility to drop a few and only move ahead with those that demonstrate better progress and have rigorously validated the real market/business potential. Such a portfolio approach to managing open innovation results in much higher overall ROI for the corporate even after accounting for the losses incurred from the failed experiments.

In bringing forth such a Product Management approach to the implementation of SPARK Grants to iDEX startups to fund the co-development of defence grade solutions to cater to the needs of the DISC challenges, it is imperative to integrate these principles in the planning and execution going forward:

1. **Investment Orientation** connected to continuous risk measurement and management, leading to a portfolio of innovation assets (products and companies) whose upside shall more than compensate for the losses incurred from investments made in failed assets.

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2. Progress of SPARK Grantees and their Performance individually have to be measured and evaluated using **metrics & milestones** that are tied to the specific perceived risks and in the mitigation.

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3. Incentives for beneficiaries tied to their assuming complete ownership and responsibility to achieve the ultimate results and outcomes, as desired under the larger vision of iDEX. Avoiding a funded-project mindset by setting the bar higher with specific goals and deliverables that are tightly aligned to the final results and outcomes, and thereby orienting them in the direction of product innovation and enterprise creation. By setting expectations appropriately the beneficiaries are influenced to adopt a **startup entrepreneur's approach** in terms of focus, priorities, and behaviour overall.

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4. Decisions concerning sanction and disbursement of grant funds, reporting progress on pre-approved milestones, review of milestones progress, feedback, facilitating support in the form of resources and services etc. shall be based on **'success indicators' vs 'safety indicators'**. Safety indicators being linked to the conformance to the statement of work and compliance to budgeted costs (indicator of safety). Success indicators linked to measurable goals or significant deliverables both interim and final, which validate the direction and progress towards achieving the ultimate outcomes.

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5. In the project management approach, usually enacted with the intent to keep costs low, avoid budget overruns, reduce cases of over-costing etc. and in an attempt to limit the **'false positives'**, the process of managing the disbursement of grants gradually tends to become more rigid rather than rigorous. The flip side of this is that the bar is set too high and a one-size-fits-all approach emerges, which leads to passing over several high potential innovations - the **'false negatives'**. These are the ones that typically end up achieving remarkable success outside the system, ending up as the big missed opportunities. The primary goal of the VC mindset is to avoid these 'false negatives', and the Risk/Product Management allows to spot such **'diamonds in the rough'**, nurture them with the right balance of flexibility and control, and catalyse their growth to generate huge success.

## 2

## Categorization of SPARK Grantees on the basis of Risk Factors

# RISK FACTORS

### ► Budget Diligence Risk

1. Is the Product Development Budget (PDB) estimated accurately considering all costs vital and essential for completing the planned activities to realise the desired/viable product?
2. Is the PDB having a higher share of Prime (Direct) costs as compared to Overheads?
3. Is the matching contribution from the grantee higher than the funds sought from the SPARK Grant?

### ► Product Viability Risk

1. Is the planned Product Specification in aspects of design, specifications, features & functionalities, system integration, deployment and user-acceptance, life cycle maintenance and upgrade etc. validated to meet defence needs as issued in the form of Services QRs?
2. Is the final deliverable of capable of meeting the QA and certification standards of military, and ready for being accepted for defence production, procurement or deployment?

### ► Budget Viability Risk

1. Is there sufficient Cash at the hands of the SPARK Grantee from both SPARK Grant funds and matching contribution to complete the planned statement of work for product development?
2. Is a significant share of the Cash part of matching contribution allocated to direct costs as opposed to other overheads?
3. Is the SPARK Grantee able to guarantee the availability of funds indicated as the Min. Cash contribution?

### ► Capacity & Competencies Risk

1. Is the SPARK Grantee capable of building the team/company with the critical skills and expertise in the areas of innovation, technology and entrepreneurship to execute towards the desired outcomes?
2. Is the SPARK Grantee able to achieve maximum performance and 100% utilization of the planned/funded resources?

# RISK ASSESSMENT

## Budget Diligence Risk (BD) Risk

### Rule 1

- If Prime Costs > 90%, BD Risk = LOW;
- If Prime Costs > 70%, BD Risk = MEDIUM;
- If Prime Costs < 70%, BD Risk = HIGH

### Rule 2:

- If Total Matching Contribution (TMC) > 2 times SPARK Grant requested, BD Risk = LOW;
- If Total Matching Contribution (TMC) > SPARK Grant requested, BD Risk = MEDIUM;
- If Total Matching Contribution (TMC) < SPARK Grant requested, BD Risk = HIGH;

## Budget Viability (BV) Risk

### Rule 1:

- If MC-Cash > 50% of TMC, BV Risk = LOW;
- If MC-Cash > 25% of TMC, BV Risk = MEDIUM;
- If MC-Cash < 25% of TMC, BV Risk = HIGH;

### Rule 2:

If the Grantee is NOT able to show proof of availability of funds against minimum cash contribution, then BV Risk is HIGH, irrespective of assessment under Rule-1;

**NOTE:** In computing the PDB, the Salary for Founders/Promoters should be capped at a total of 25% of the lesser of fair market salaries or the last drawn professional salary/fee. This Salary (Actuals) shall be included only under the Primary Overheads. The remainder 75% Accruals shall be considered as In-Kind part of the TMC, but not included in the PDB.

## Product Viability Risk (PV) Risk

Across the board for all Grantees, Product Viability Risk is = HIGH, barring few cases with LOW to MEDIUM PV Risk, and this can be mitigated or managed only when QRs for the desired product are developed jointly with the Nodal Agency, under the closer supervision and support of the PIs. The extent of progress achieved in the past indicated by the higher share of Past Expenditures part of TMC, can be taken as the measure for the assessment of PV risk.

## Capacity & Competencies (CC) Risk

### Rule 1:

Assessed based on the past track-record of the core team providing adequate assurance that the SPARK Grantee is capable of realising the desired/viable product by executing with strong performance in an accelerated manner;

## CATEGORY

## 1

BD RISK = LOW

BV RISK = LOW

PV RISK = LOW/MEDIUM

CC RISK = LOW/MEDIUM

**Assessment**

- The Matching Contribution being on the higher side is an indicator of sound ambition to exploit the opportunity and of the capability to back their bets with effective execution;
- Overall most likely to deliver a defence grade product, but primary focus of progress during the first 2 milestones should be around finalising the QRs working jointly with Nodal Agency, estimating accurately the product development budget, and finalising the project plan for product development, trials and production;

**Recommendation [ACCELERATOR TRACK]**

- Given the lower financial diligence risk and budget viability risks, the SPARK Grantees in this category must be taken through a fast-paced ACCELERATOR track;

**ACCELERATOR Track - Outline**

- Sanction is made for 100% of the total funding possible under the SPARK Grant;
- Managed with minimal control exercised directly through the PMU, with minimal scope of reporting, review and diligence, so as to avoid slowing things down;
- Transfer of grant funds for progressive milestones can be fast-tracked in-step with the progress demonstrated and performance achieved;
- Role of incubators is focused on facilitating access to resources, expertise, and other needs as required by the SPARK Grantee;

## CATEGORY

## 2

BD RISK = LOW

BV RISK = LOW/MEDIUM

PV RISK = LOW/MEDIUM

CC RISK = LOW

**Assessment**

- The higher risk in financial diligence can be managed through a rigorous framework of grant allocation for development costs, which ensures that there is sufficient cash to meet the most vital and essential expenditures;

- Although demonstrates reasonable potential to deliver a complete solution in the form of military grade product, it is required to validate this potential on the basis of progress demonstrated and performance achieved in the first 2 milestones.
- Although past track-record gives reasonable assurance to realise the desired/viable product by executing with strong performance in an accelerated manner, the cause of concern comes from the lack of ambition to fully exploit the opportunity and/or to raise external funding to stake a matching claim;
- To mitigate the budget viability risks the SPARK grantees in this category, the primary focus of progress during the first 2 milestones should be around finalising the QRs working jointly with Nodal Agency, estimating accurately the product development budget, and finalising the project plan for product development, trials and production;

### **Recommendation [INCUBATOR TRACK]**

- To manage the risks concerning product viability, and overall execution, it is important for the SPARK grantees in this category to be put through a high-touch incubation process to strengthen their core competencies, financial standing and to emerge as a strong contender to deliver a military grade product;

### **ACCELERATOR Track - Outline**

- Sanction is made for the total funding possible under the SPARK Grant, but the approval is capped at 75% of the total funding, and when the grantee demonstrates adequate progress, the approval shall be raised to 100%;
- Allocation of funds for specific expenditures is managed much more closely, usually in the form of Indent-Review-Approval process implemented by the Partner Incubator, compliant with the guidelines for allocation for expenditures issued by DIO;
- Mandated to engage in fully-residential model working very closely with the partner incubator, PMU, Nodal agency etc. to achieve fast-tracked progress in the first 2/3 milestones, with milestone goals and deliverables broken down into weekly and monthly execution plans
- Primary focus of incubation should be around supporting the grantee to raise external funding on the basis of core technology strengths, dual-use potential etc.

## CATEGORY

## 3

BD RISK = HIGH

BV RISK = HIGH

PV RISK = HIGH

CC RISK = MEDIUM/HIGH

**Assessment**

- The highest degree of risk in financial diligence when combined with the medium to high levels of risk on the core competencies and overall execution capabilities, requires that this category be managed first through a process of **pre-incubation** before graduating to the Incubation or Accelerator track depending on the progress achieved;

**Recommendation [PRE - INCUBATION TRACK]**

- To manage the risks concerning product viability, and overall execution, it is important for the SPARK grantees in this category to be put through either a Fellowship program or an EIR program, which nurture the development of the core innovation, technology and entrepreneurship skills in the specific context of building a military grade product to serve the needs of the respective challenge;

**FELLOWSHIP Track - Objectives & Approach**

- Offered for those SPARK grantees, who are recent graduates or early-career professionals;
- Sanction is made only up to 30% of the total funding possible under the SPARK Grant, and grant funds are offered to the Partner Incubator who have the discretion to deploy the funds in the implementation of the Fellowship program;
- Opportunity to groom them into highly competent innovators, by helping them achieve the design and development of a subsystem of the viable end-product, demonstrating the technology capabilities or the market potential of a new product category with which external funds can be secured;
- Support them to graduate into competent employees to become part of other iDEX startups, where their skills, developed modules, and experience gained can be exploited in the larger interests of iDEX program;

**EIR Track - Objectives & Approach**

- Offered for those SPARK grantees, who are seasoned professionals but in the very early stages of their entrepreneurial journey, with relatively better skills & competencies than those in the Fellowship track, and also more capable of executing steadily towards the desired outcomes, with adequate guidance and mentoring;

- Sanction is made only up to 30% of the total funding possible under the SPARK Grant, and grant funds are offered directly to the SPARK grantee;
- Expenditure of the grant funds are reviewed and monitored by the Partner Incubator, against a structured project plan executed under the constant guidance of the mentors assigned;
- Expected to achieve the design and development of a subsystem of the viable end-product, demonstrating the technology capabilities or the market potential of a new product category with which external funds can be secured;
- Expected to graduate to the Incubation Track within the first 2 milestones, or to be acqui-hired by any other grantee in the Accelerator track;

## SPARK Grants

### Financial Diligence & Viability Framework

# 3

#### This framework intends to:

- bring greater transparency and clarity to the review and approval of the proposed budget estimates, accommodating differences and variations across challenges, financial positions of the grantees etc.
- ensure the SPARK grantees are disincentivized to estimate their budgets with inflated, erroneous, or irrelevant costs;
- allow for greater room for flexibility in the hands of the grantees, whilst giving the adequate control to DIO for managing future risks/ contingencies;
- connect the 'skin-in-the-game' of the grantees with the larger interest of achieving the desired outcomes;
- bring in a greater degree of fairness, ensuring that equitable allocation of the SPARK grant is done for all grantees, based on merit;

## Product Development Budget | Categories of Expenditures

# A

### PRIME COSTS

All those Direct costs related to the core activities concerning the technical, design, development, testing and certification aspects of the product development exercise, and considered as vitals to realise the desired/viable product are included in this category.

Both the Capital and Operating expenditures covered under this category should be limited to the following costs below

#### CapEx

- Infra, Equipment & Machinery (Lab)
- Computing Resources
- Private Cloud
- PCs & Laptops (Employees)
- Software (OS & Applications)

#### OpEx

- Infra, Equipment & Machinery (Lab)
- Computing Resources
- Private Cloud
- PCs & Laptops (Employees)
- Software (OS & Applications)

# B

### PRIMARY OVERHEADS

All those Indirect costs related to the core activities concerning the technical, design, development, testing and certification aspects of the product development exercise, but considered only as essentials to realise the desired/viable product are included in this category.

Both the Capital and Operating expenditures covered under this category should be limited to the following costs below:

#### CapEx

- Infra & Facilitie (Lab)

#### OpEx

- |                                   |                                   |
|-----------------------------------|-----------------------------------|
| • Salaries for Promoters/Founders | • AMC for equipment/machinery     |
| • Field Visits - Travel Costs     | • IT/Cloud Systems - Subscription |
| • Utilities & Maintenance         | • IPR Fees & Costs                |
| • Rent (Office & Lab)             | • Contingencies/Overruns          |
| • Rent for Computing Resources    | • Events & Conferences            |
| • Internet & Power                | • Travel expenses                 |
|                                   | • Registration/Booth charges      |

# C

## SECONDARY OVERHEADS

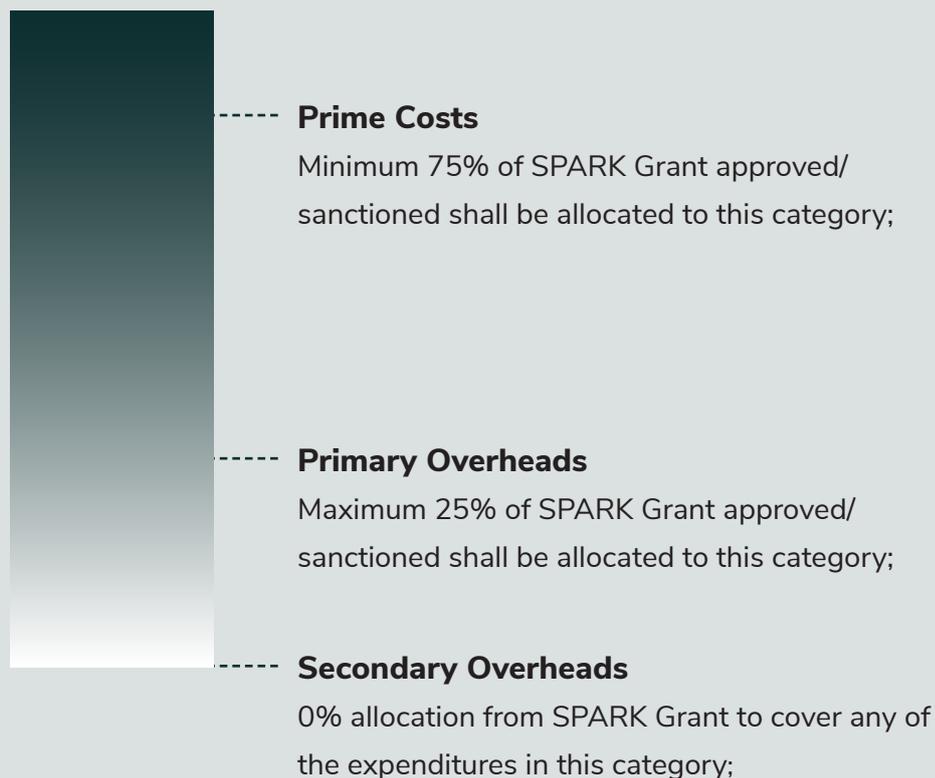
All those Indirect costs not related to the core activities concerning the technical, design, development, testing and certification aspects of the product development exercise, and not considered even as essentials to realise the desired/viable product are included in this category.

Only Operating expenditures are allowed under this category.

### OpEx

- Salaries for Admin, HR, Marketing & Sales
- Professional Services Fees
- Legal, Accounting/Audit, Statutory
- Travel - BD & Sales
- Branding & MarComm
- Interest for Loans
- All Others not specified under Prime Costs or Primary Overheads

## | SPARK Grant - Allocation of Fund to Expenditure categories



## Matching Contribution | Types of Contribution

The Matching Contribution from the SPARK Grantee shall be allowed under 3 types:

### 1. CASH

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All the cash transferred to the SPARK Grantee company's account exclusively for the purpose of funding the iDEX Product Development activities. This may include:

- a. Capital Infusion from the Promoters (operated in the same manner as Owner's Equity),
- b. Cash from awards, funds from other grants which allow the money to be used as a supplement to SPARK Grant,
- c. External funding in the form of debt/equity investments, bank loans etc.
- d. Revenues generated by the company
- e. Partner Funding

**Note:** All funds grouped under this category shall be substantiated with documentary evidence in the form of self-attested Bank account statements, submitted to the PMU of DIO. It is expected that unless explicitly approved under exceptional circumstances, these funds shall be available for expenditure during the grant lifecycle.

### 2. IN-KIND

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This corresponds to the monetary value (based on fair market value for intangibles or competitive market prices for others) of all expenditures incurred by the SPARK Grantee company either on actuals or accruals. The following expenditures shall be considered under this category:

- a. Salaries for Promoters (Founders), Core Technical/Operations Team, corresponding to the part not drawn as monthly salary but accrued for later payments, subject to limits acceptable to or approved by the PMU of DIO;

**Note:** In order to bring greater fairness, transparency and consistency, it is recommended that only upto 25% of the Salary for Founders/Promoters shall be included in the Product Development Budget under the Primary Overheads. The remainder 75% shall be included as In-Kind part of Matching Contribution. By limiting this to 25% it is ensured that there is less cash outflow towards salaries for founders and promoters. and doing so commits the minimum cash contribution from the SPARK Grantee only towards the Prime Costs and Primary Overheads excluding the Salaries for founders/promoters.

- b. Equipment/Machinery, Tools etc, corresponding to the depreciated value of the assets for the estimated duration of the product development activity;
- c. Valuation of IP, Knowhow, or other intangibles;
- d. Partner Resources, offered to the SPARK Grantee exclusively for the purpose of product development, in the form of equipment (considered on the basis of the depreciated value of the assets) or resources (valued at fair market prices);
- e. Partner Funding, offered in the form of payment made to procure equipment (considered on the basis of the depreciated value of the assets) or resources (valued at fair market prices);

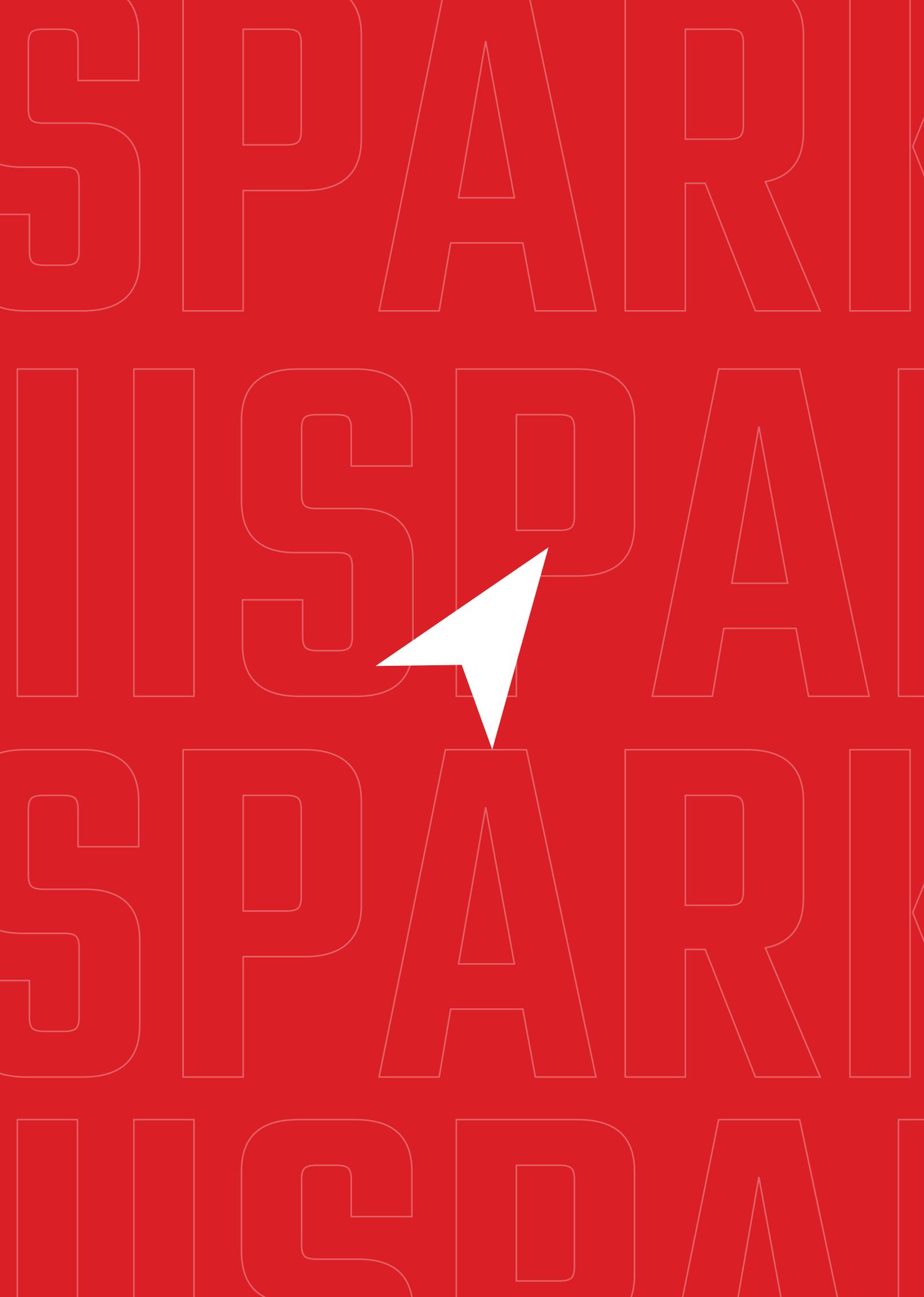
**Note:** All expenditures grouped under this category shall be substantiated with documentary evidence in the form of invoices, bills, receipts etc. as evidence for expenditure and in the form of self-attested Bank account statements, as evidence of payment, duly submitted to the PMU of DIO.

### 3. Past Expenditures

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This corresponds to the monetary value (based on fair market value for intangibles or competitive market prices for others) of all expenditures incurred by the SPARK Grantee company in the past specifically related to technology / product development activities, which have been showcased during the SPARK Grant selection process.

**Note:** All expenditures grouped under this category shall be substantiated with documentary evidence in the form of invoices, bills, receipts etc. as evidence for expenditure and in the form of self-attested Bank account statements, as evidence of payment, duly submitted to the PMU of DIO. It is the responsibility of the SPARK Grantee to prove beyond reasonable doubt that all artifacts or IP generated in the past shall be applied or reused effectively.



# SPARK II

**A Framework for partnering with  
Innovative Indian Aerospace  
and Defence startups**

## Introduction

It is intended to create a mechanism to partner with promising innovative Indian startups that have the potential of creating cutting edge equipment and armament for the Indian Armed Forces, and to widen the Indian technological and industrial base to serve Indian needs.

This guideline complements Defence Innovation Organisation's SPARK guidelines for funding innovations from startups to serve Indian Armed Forces.

## Investments under the SPARK-II program of DIO-iDEX

In all investments made under the SPARK II guidelines, it will be ensured that the applicant startup has at least an equivalent amount of financial or in-kind contribution for developing the product. The matching contribution can come from the founders of the company, venture investors, banks, or other funding partners who are acceptable to DIO-iDEX.

All investments in SPARK II shall follow the SPARK method of budget planning under the heads of Prime, Primary Overhead, and Secondary Overheads, to ensure continued risk and cost sharing as delineated under the current SPARK guidelines.

The investments under the IDEX program can be proposed in the following amounts:

1. **Seed stage support** – up to INR 2.5 cr per startup, to be provided as grant/convertible debt/simple debt/equity to startups with a working proof concept of their technology, and with potential of developing useful products and emerging as a supplier to Indian Tri-services.
2. **Pre Series A/ Series A investments** – up to INR 10 cr per startup, to be provided to startups as grant/convertible debt/simple debt/equity whose technology has already been validated by one of the Forces under the Defence Ministry and needs the resources to scale up the

solution. Additionally, these investments should be made, as far as possible, in conjunction with other investors also investing in the company, to ensure due diligence by a market-driven entity also.

- 3. Follow-on investments** – iDEX-DIF should retain a provision for higher investments, without publicizing this extensively, to ensure that DIF can make specific, high requirement investments when required.

## Eligibility

The Investment Committee of SPARK II can consider a startup for support under these guidelines based on the following eligibility conditions:

**Interest from Indian Armed Forces** – If a company offering an innovative product/technology/process/service has received documented interest for a potential purchase/ work order from a designated directorate(s) of any of three Armed Services, the Investment Committee of SPARK II shall consider the company under these guidelines.

**The Tri-Services shall designate such directorates, such as Perspective Planning Directorates, Cyber Space Command, Defence Space Command, Military Intelligence, etc. DIO shall accept the designation from the Tri-Services.**

**Direct application/Discovery by DIO-iDEX Team** - This scheme will accept interest from companies that directly apply to iDEX/DIO, or that are discovered from open challenges, pitch events, or Technology Watch of iDEX. The interested companies shall be evaluated on the Weighted Opportunity/Risk framework of SPARK 2 guidelines detailed in this document, and the relevant legal due diligence, before investments.

**Support from Foreign Friendly Forces/Countries** – If an Indian innovative aerospace or defence startup has received investment, work or purchase order, or an indication or intent thereof, it will be evaluated under the instant guidelines for support from DIO-iDEX, to ensure India retains access to cutting edge technologies developed here.



# 4

## Investment Committee

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It is expected that this evaluation will be done, based on prior due diligence undertaken by the iDEX team, by a high powered and competent committee, which includes the following representatives/officials:

1. User representatives (Tri-services)
2. Funding agency representatives
3. Sector experts (Academia or industry)
4. VC/finance representatives

This committee should be kept small, and be **empowered to make investment decisions**, based on these guidelines. It is desirable that the **committee's recommendations be binding on the finance wing of the investing agency**, and that the finance department does not make its own independent investment decision/due diligence – this is crucial to ensure that informed investments decisions are made **keeping in mind the opportunity for the nation and risk of the technology, and not only fiduciary control**. The iDEX team shall function as the investment advisory team for this scheme.

# 5

## Evaluation System

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The evaluation under these guidelines shall be done on a weighted Opportunity/Risk assessment, as detailed below. Given the unique nature of the defence industry, where the market size is limited to a single or few inter-connected buyers, and the impact of new technologies can be immense, decisions to enter companies needs to be based on the opportunity offered by the technology/product/startup. This opportunity and its various aspects can be evaluated on parameters given below, to provide structure for the decision making.

The opportunity of investing in a company shall be evaluated on the following four parameters:

## Technology Advantage

- 1. Breakthrough potential**—Can this technology/startup create a breakthrough technology, which has the potential for increasing India's edge with its potential adversaries?
- 2. IP Potential**—Does this startup have an IP that can be created into a new product or even more advanced IP that pushes the frontier of Indian defence technology? Can this IP be harnessed by other Indian Tri-services, or DPSUs? Can this technology allow Indian military to develop preemptive advantages aligning with strategic imperatives?
- 3. Technology Leadership**—Is there a likelihood that the technology can emerge as the Dominant Standard in the future, further enriching its strategic value?

## Product Advantage

- 1. Category creation or Product leadership potential**—Can this product create a new category of weapons, armament, protection, or equipment likely to be used by the Defence Forces? Can this product create a new market in India or abroad? How likely is this product to emerge as the most advanced within the exiting category in terms of performance and installed-base substitution?
- 1. Indigenous content**—Is this innovation/product/startup mostly Indian? Or is it dependent on imported components/patents?
- 1. Future proofing**—Is the underlying technology or product/system design capable of continuously aligning with emerging trends at least for the foreseeable future?

## Commercial Advantage

- 1. High dual use potential**—Will this company's products have a non-military use? Can this company leverage its technology for civilian uses and create a viable business line there?
- 2. High export potential**—Will this company/product be able to export to other friendly countries, either the military or the civilian product?
- 3. Potential for a high-growth indigenous defence enterprise**—Does this company have the potential of becoming a domestic high-growth defence enterprise, serving domestic and international customers?

### Integration Advantage

Integration in India's Perspective Planning, and complementarity with existing platforms.

- 1. Existing platforms**—Can this company's products integrate seamlessly with and/or augment capabilities of the prominent Indian defence platforms?
- 2. Upcoming platforms**—Can this product augment the new platforms being acquired/developed by India?

Advantage Type	Description	Weight	Score out of 5 (indicative)	Weighted Factor (Weight * Score)
Technology	Breakthrough potential through IP	30%	3	0.9
Product	Category creation, tech leadership potential and Indigenous content	30%	4	1.2
Commercial	Dual use possibility, export, and high-growth indigenous defence enterprise potential	20%	5	1.0
Integration	Existing or upcoming prominent platforms	20%	3	0.6
<b>Total Opportunity Score</b>				<b>3.5</b>

# 6

## Risk-based evaluation framework- Types of Risks

Investing in startups is an inherently risky proposition since the investment is usually not underwritten by collaterals and has a high chance of failure. The following risks need to be assessed for every startup:

### Technology Risk

This is important for the investor to understand since, in most cases, the startup will only have the technology and/or IP, and the investment decision will hinge on these two. In case of IDEX the following questions need to be addressed by a technical committee comprising of the technology representatives from the DPSUs and the armed forces.

1. What is the technology (i.e. what is its intended function)? Is it theoretical or proven?
  2. How is it better than what currently exists? What problem is it solving?
  3. If it is still just theoretical, how will the startup demonstrate proof? How much time will the startup take to develop MVP of the same?
  4. Is the technology in question part of a system, or is it “stand-alone”?
  5. Is the technology defensible from an IP perspective? Any technical dependencies that need to be accounted for?
  6. Does the company have a high likelihood of lawsuit for patent or copyright infringement?
- 

### **Market and Financial risk**

Despite the IDEX startups primarily targeting the defence market, there needs to be an assessment done to understand the overall target market for the startup. A broader market will lead to better product validation and constant revenue that will increase the chance of survival for the startup.

1. How big is the total available market? How big is the overall addressable market (as a subset of the total available market)?
2. Are there active competitive players in the market? How different is competitor’s product/solution? What are the significant barriers to entry in the market?
3. Is the market expanding or contracting and at what speed?
4. Is now the right time for the business? This needs to be answered from a user perspective – sometimes the user may not be equipped suitably to deal with new technology. For example, an Uber would not have succeeded in the market if everyone did not have affordable access to data and navigation.
5. How long is the typical sales cycle?

### **Operational Risk**

This is for IDEX to understand if the company will be able to deliver in proportion to the capital provided to them.

1. Do the unit economics seem to work? If not, what are the assumptions required to achieve profitability? Are the assumptions too aggressive or conservative?
2. Does the startup have suppliers in place? Does the startup have the necessary production capacity/can it be quickly acquired?

## People Risk

People risk is important to an investor because mostly, a startup relies on a very small team and does not have extensive processes in place. A misunderstanding between two founders can shut down the company or hamper significantly the progress of the company.

1. Are the founders/team capable of getting the company up and running? Do they have experience in the sector/ industry and/or possess the relevant knowledge to do what needs to be done.
2. Is the company receptive to feedback? Is the team candid about the state of the business?
3. Do the founders have a long term vision for the company? Are they working full time on this?
4. Does the company have any outstanding complaints with early employees or founders? Are there regulatory challenges involved in the sector?

Once the above risks have been identified and discussed, the same can be put into the matrix below and awarded a score between 1-5. Here, a score of 5 denotes the highest risk (low confidence), and 1 the lowest risk (high confidence). This translates into a maximum theoretical weighted score of 5 for any startup.

## Decision Matrix

The committee may use the **following guidelines for investment approvals:**

- The Opportunity score less the Risk score can be used to determine the investibility of the startup. If the score is positive, the committee may consider moving forward on documentation due diligence for investment. If the score is neutral or negative but the committee feels there are areas of improvement for the company, it should refer the company to iDEX for further support , to possibly receive grant and incubation support to accelerate the progress to become investable in the near future.

For example, in above case:

Opportunity score: 3.7

Risk Score: 3.5

Overall Investibility score: Positive Proceed to due diligence.

Risk Type	Description	Weight	Score out of 5 (indicative)	Weighted Factor (Weight * Score)
Technology	Technological risk	30%	3	0.9
Market	Market/Financial risk		4	1.2
Financial	Operational risk	30%	5	1.0
People	Team strength/relevant	20%	2	0.4
	experience	20%		
<b>Total Risk Score</b>				<b>3.5</b>

- While the above table provides a near-objective method for evaluating a company for potential investment, it should be kept in mind that no objective criteria will ever capture all the potential aspects that may determine whether the Govt of India should invest in a company. The empowered committee/ investment committee should use these parameters as guides, but make an overall decision keeping in mind the Indian defence requirements and national security priorities.
- Any startup receiving an overall score of four (4) or above in Opportunity Score should be eligible for investment/grant, and in case the risk score is even higher, iDEX should work to manage the risk in line with the overall needs of the Tri-services. See section on Process below
- Companies with risk scores higher than 4 should be evaluated again by the entire DIO board.

Additionally, if any startup has received investment, or a pledge of investment, from a friendly foreign government, government arm, government-backed venture capital fund, or similar entities, they may be assessed for investment as per these guidelines on priority, in conjunction with the appropriate/ relevant Indian Armed Service.

## Due Diligence Process

Post the Investment Committee approval; the startup should undergo a detailed due diligence through an approved third party service provider (such as a law firm, CA firm, or other service outsourcing agency) to ascertain the veracity of accounts, legal and other details provided by the startup during the investment process. If the startup is unable to prove any of the claims satisfactorily, the IC approval shall be withdrawn/ put on hold until such proof is provided.



**END OF SECTION**

Stunning  
for SPAAR  
SPARK  
EiR Prog  
Program



# **Guidelines for SPARK EiR Program**

## Introduction

**Entrepreneur-In-Residence**, popularly referred to as EiR, is a program most commonly implemented in the startup ecosystem by various types of entities viz. VC Funds, Incubators, Institutions, Research/Innovation Labs, Corporate Accelerators etc. to serve different purposes. From an Incubator standpoint, the model has been primarily adopted to offer research fellows, early-career technologists, or even mature professionals, a soft landing option to ease their transition into a career as an entrepreneur. Generally, these EIRs are offered necessary facilities, resources, and services, including in most cases financial support, to help them manage this transition whilst at the same time accelerating their progress of building a venture on their own.

However, these EiR programs are offered on a time bound basis, usually ranging from 3 to 6 months, and in some cases extended up to 1 year. The financial support during the EiR program is most often offered in the form of a monthly stipend, paid directly to the individual, apart from a Startup Grant to help the EiR person meet the operating expenses incurred in technology/product development, building a team of competent professionals, setting up and operating a company etc.

The success of EiR programs is evaluated on the basis of outcomes, including metrics such as the % conversion from EIRs to Startups, number of commercial technologies/products amount of startup investments raised by EIRs etc.

Some of the most popular EiR programs are:

**1. NIDHI EiR** is a scheme sponsored by DST, and is implemented through the network of TBIs established with financial support from DST, with the chosen incubators offered grants-in-aid to operate the EiR program.

<http://www.nidhi-eir.in/>

[http://www.nidhi-eir.in/pdfs/NIDHI-EIR\\_guideline.pdf](http://www.nidhi-eir.in/pdfs/NIDHI-EIR_guideline.pdf)

**2. K-Start** is an EiR program supported by Kalaari Capital, among the most successful VC funds in India,

<https://kstart.in/entrepreneur-in-residence/>

## Case for offering EiR to iDEX SPARK Grantees

In the DISC challenges launched under the iDEX banner, in addition to **MSMEs** and **Startups**, applications for technology enabled solutions to the defence challenges were sought from individuals including research or technology professionals currently employed in academia or the corporate sector. Several applicants would fall in this category, indicating a strong intent amongst professionals to take up innovation and entrepreneurship in the defence sector.

During the appraisal process of the product development execution plans and budgets presented by these DISC Winners, it was observed that several applicants under the Startup and Individual categories are unable to come up with an equal or higher Matching Contribution to the amount of fund sought under the SPARK Grants. More specifically the Cash part of their proposed matching contribution is very low, making their product development plans unviable. In addition, some of those who have applied under the category of Startups, are in the very early stage too and have made only minimal progress when compared to those in the Individuals category.

To bring a VC mindset to managing the disbursement of the Grants, and to practice a Product Management approach in managing the product development milestones and deliverables of the SPARK Grantees (who are in effect iDEX Startups irrespective of having applied under MSME, Startup or Individual categories), a framework for implementing Financial Diligence and Viability has been developed. The assessment and decisions made through this framework help in striking the right balance between extending adequate flexibility to the innovators (SPARK Grantees) and exercising sufficient control to ensure diligence, fairness, and overall viability of the projects to achieve the desired outcomes.

However, to keep fairness across the various kinds of applicants, this EiR program will be offered for just the first year to candidates, post which they will be required to raise matching funding.

The central focus of the SPARK framework is in measuring, mitigating and managing 4 types of risks, **(a) Budget Diligence Risk, (b) Budget Viability Risk, (c) Product Viability Risk, and (d) Capacity & Competencies Risk.**

Based on the measure of these risks factors, the Winners have been grouped under 3 categories viz. **Acceleration, Incubation, and Pre-Incubation**, described in the section below.



## 3

## Categorization of SPARK Grantees on the basis of Assessment of Risk Factors

### Budget Diligence Risk

1. Is the Product Development Budget (PDB) estimated accurately considering all costs vital and essential for completing the planned activities to realise the desired/viable product?
2. Is the PDB having a higher share of Prime (Direct) costs as compared to Overheads?
3. Is the matching contribution from the grantee higher than the funds sought from the SPARK Grant?

#### Rule-1:

If Prime Costs > 90%, BD Risk = LOW

If Prime Costs  $\geq$  70%, BD Risk = MEDIUM

If Prime Costs < 70%, BD Risk = HIGH

#### Rule-2:

If Total Matching Contribution (TMC) > 2 times SPARK Grant requested, BD Risk = LOW

If Total Matching Contribution (TMC)  $\geq$  SPARK Grant requested, BD Risk = MEDIUM

If Total Matching Contribution (TMC) < SPARK Grant requested, BD Risk = HIGH

### Budget Viability Risk

1. Is there sufficient Cash at the hands of the SPARK Grantee from both SPARK Grant funds and matching contribution to complete the planned statement of work for product development?
2. Is a significant share of the Cash part of matching contribution allocated to direct costs as opposed to other overheads?
3. Is the SPARK Grantee able to guarantee the availability of funds indicated as the Min. Cash contribution?

#### Rule-1:

If MC-Cash > 50% of TMC, BV Risk = LOW

If MC-Cash  $\geq$  25% of TMC, BV Risk = MEDIUM

If MC-Cash < 25% of TMC, BV Risk = HIGH

If the Grantee is NOT able to show proof of availability of funds against minimum cash contribution, then BV Risk is HIGH, irrespective of assessment under Rule-1.

**Note:** In computing the PDB, the Salary for Founders/Promoters should be capped at a total of 25% of the lesser of fair market salaries or the last drawn professional salary/fee. This Salary (Actuals) shall be included only under the Primary Overheads. The remainder 75% Accruals can be considered as In-kind part of the TMC, but shall not be included in the PDB.

### Product Viability Risk

1. Is the planned Product Specification in aspects of design, specifications, features & functionalities, system integration, deployment and user-acceptance, lifecycle maintenance and upgrade etc. validated to meet defence needs as issued in the form of Services Qualitative Requirements (QRs)?
2. Is the final deliverable of capable of meeting the QA and certification standards of military, and ready for being accepted for defence production, procurement or deployment?

**Note:** Across the board for all Grantees, Product Viability Risk is = HIGH, barring few cases with LOW to MEDIUM PV Risk, and this can be mitigated or managed only when QRs for the desired product are developed jointly with the Nodal Agency, under the closer supervision and support of the PIs.

The extent of progress achieved in the past indicated by the higher share of Past Expenditures part of TMC, can be taken as the measure for the assessment of PV risk.

### Capacity & Competencies Risk

1. Is the SPARK Grantee capable of building the team/company with the critical skills and expertise in the areas of innovation, technology and entrepreneurship to execute towards the desired outcomes?
2. Is the SPARK Grantee able to achieve maximum performance and 100% utilization of the planned/funded resources?

#### Rule-1:

Assessed based on the past track-record of the core team providing adequate assurance that the SPARK Grantee is capable of realising the desired/viable product by executing with strong performance in an accelerated manner.

Category	Budget Diligence Risk	Budget Viability Risk	Product Viability Risk	Capacity & Competencies Risk
Acceleration	Low	Low/Medium	Low/Medium	Low
Incubation	Medium	Medium/High	Medium/High	Low/Medium
Pre-Incubation/EiR	High	High	Medium/High	Medium/High

# 4

## Guidelines for SPARK EIR

### Objectives

The EIR program aims to accelerate the pace of progress achieved by the SPARK Grantees in significantly lowering the inherent degree of risks associated with the overall diligence and viability of their proposed product development plans and budgets, and with their own capabilities to effectively execute and achieved the desired outcomes. The EIR program implemented by the Partner Incubators, shall aim to nurture the development of the chosen SPARK Grantees (Startup or Individual) into competent innovators and capable entrepreneurs, who are expected to graduate to the Acceleration track within the maximum duration as is stipulated for each category of EIRs defined below.

To achieve this desired outcome, the EIRs shall be given adequate support, financial resources and mentoring to design and develop a subsystem of the viable end-product, demonstrating the technology/product capabilities critically needed to meet the needs of the military, as stated in the innovation challenge. The EIRs must aim to achieve the most critical milestone of sourcing funds in the form of Grants or Investments from other sources to increase their Matching Contribution, as only this will trigger their graduation out of the Pre-Incubation track into the Acceleration track. To do so it is recommended that the EIRs identify non-military applications for their technology/product, and pitch a new/differentiated solution to raise grants/investments from other sources, which is defined as Reference Product Innovation and described in further detail below.

### Reference Product Innovation

During the tenure of the EIR program, the focus is entirely on accelerating the development of the EIR into a competent technology/product innovator in the chosen/relevant technology domain(s) but broadly aligned with the specific innovation challenge for which the EIR was originally selected as SPARK winner. To do so, it is recommended that the EIR aims to develop a fully-functional prototype of a subsystem of the desired military-grade product which will completely address the needs of the defence services. The definition of the target subsystem, referred to as the Reference Product Innovation (RPI) shall be approved by the PI after necessary consultation with the PMU of DIO. It is expected that the EIR under the guidance and mentorship of the PI shall submit a detailed project plan and budget for the proposed RPI to the PMU of DIO for seeking approval within 30 calendar days from the date of commencement of the EIR program, as shall be notified in the EIR Grant Letter issued by the DIO. To keep fairness across the various kinds of applicants and grants, this EIR program will be offered for just the first year to candidates, post which they will be required to raise matching funding.

## Program Structure & Methodology

### EIR Categories

In order to accommodate a few different profiles of prospective defence innovators/entrepreneurs that have emerged from among the group of SPARK Winners who have been assessed under the High-Risk category, two types of EIRs have been defined to help implement the program more effectively.

#### 1. Early Career Professionals

For those SPARK Winners, whose Primary Applicant is a recent Graduate or early-career professionals, less than 10 years of relevant technical experience in academia or industry.

#### 2. Experienced Professionals

For those SPARK Winners, whose Primary Applicant has more than 10 years of relevant technical experience in academia or industry, has shown a strong vision and intent to pursue entrepreneurship and has come out of any form of employment. The case involving the Primary Applicant being a Veteran from the Indian Defence Services, with sufficient technical experience, has demonstrated a strong vision and intent to pursue entrepreneurship in the defence sector, and has terminated service with the armed forces shall be considered under this category.

### EiR Stipend

Startups or Individuals selected under this category shall receive a monthly stipend of up to Rs.30,000, given only to the Primary Applicant, for a maximum duration of 12 months. The total consolidated EiR Stipend shall not exceed Rs. 3.0 Lakhs per SPARK Grantee, and irrespective of the outcomes at the end of the maximum tenure, the EiR Stipend shall be terminated. In addition, during the tenure of the EiR program, the EiR shall be eligible to receive access to coworking facilities, innovation/prototyping lab infra/resources and tech support, mentoring in the areas of technology, design, manufacturing, product innovation & management, business/market strategies, financial planning, fund raising and investments etc. from the Partner Incubator, which shall be directly funded by DIO to offer the requisite services and resources aforementioned.



## SPARK EIR Grant

In addition to the EIR Grant, the SPARK Grantee shall be offered additional financial support under the SPARK Grant subject to a maximum of up to 30% of the total funding possible under the SPARK Grant during the tenure of the EIR.

This Startup Grant shall be offered by DIO to the Partner Incubator who shall own the responsibility of the effective utilization of the funds to meet the expenses incurred by the SPARK-EiR Grantee in the design and development of their proposed technology/product development.

To ensure fairness with other SPARK Grantees who have been offered financial support under the Incubation or Acceleration Track, it is recommended that the upper limit for the TOTAL SPARK Grant - maximum grant offered for those graduating from the Pre-Incubation (EiR) track, be capped at exactly 100% of the matching contribution proposed by the Grantee or less, subject to an upper limit of 150 Lakh, at the time of graduating. This Total/ Net Permissible SPARK Grant shall include the EiR Stipend and the EiR Grant offered during the tenure of the EiR program. Only the portion of the TOTAL SPARK Grant remaining to be paid during the Accelerator track - referred to as the Net. SPARK Grant, shall be paid in the form of tranches as per the regular milestones based payment described under the SPARK Grants guidelines/ WBS.

A few scenarios are provided below as examples for better understanding the guidelines proposed:

### **1: Graduating from EiR in 12 months after having successfully completed the RIP Milestone**

Stipend offered during the tenure of the EiR program @Rs.25,000 pm (1)	= Rs.3 Lakhs
Funds provided under the SPARK Grant during the tenure of the EiR program (2)	= Rs.25 Lakhs
EiR Stipend + Grant (A)=1+2	= Rs.28 Lakhs*
Matching Contribution proposed by the SPARK Grantee on graduation (B)	= Rs.175 Lakhs

- PERMISSIBLE SPARK Grant (@100% of B limited to 150 Lakhs) (C) = Rs.150 Lakhs
- Net SPARK Grant D = C-A = Rs. 122 Lakhs, payable on transition from EiR to regular SPARK Grantee, as per Milestones in the WBS.

### **2: Graduating from EiR in less than 12 months after having successfully completed the RIP Milestone**

Stipend offered during the tenure of the EiR program @Rs.30,000 pm for 10 months (1)	= Rs.3 Lakhs
Funds provided under the SPARK Grant during the tenure of the EiR program (2)	= Rs.42 Lakhs
EiR Stipend + Grant (A)=(1+2)	= Rs. 45 Lakhs*
Matching Contribution proposed by the SPARK Grantee on graduation (B)	= Rs.150 Lakhs

- PERMISSIBLE SPARK Grant (@100% of B limited to 150 Lakhs) (C) = Rs.150 Lakhs.
- Net SPARK Grant (D) = C-A = Rs.105 Lakhs, payable on transition from EiR to regular SPARK Grantee, as per Milestones in the WBS.

\* Subject to a maximum of up to 30% of the total funding possible under the SPARK Grant in the extant Product Development Case.

## Residential Incubation

In order to qualify for the EiR Grant and the additional SPARK Grant, the EiR is expected to operate in a fully-residential mode from the physical premises of the Partner Incubator on a 10\*5 basis each week. During the tenure of the EiR program, the EiR shall work under the constant guidance of one or more Mentors who will be nominated by the Partner Incubator to monitor and report the progress of the EiR.

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## Budget & Timelines

Once the Reference Product Innovation (RPI) at a conceptual level is approved by the PMU of DIO, the project plan and the budget for the design and development of the RPI shall be submitted to the PMU of DIO for approval, with indication of goals and deliverables at specified milestones. The PMU of DIO shall approve the sanction of the Grant to fund the budget up to a maximum limit of 30% of the total funding possible under the SPARK Grant. The EiR and the Partner Incubator shall be allowed the option to source additional funds if the SPARK Grant offered is less than the minimum budget estimated to develop the RPI.

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## Outcomes & Deliverables

During the EiR tenure, the EiRs must achieve all of the following outcomes and complete the necessary deliverables so as to graduate from the pre-incubation track into the acceleration track.

### 1. Product Development & QA

Delivery of production-ready prototype of the RPI, having a high degree of relevance as a subsystem of the desired military-grade product which will meet the needs of the innovation challenge issued by defence services.

#### Challenge-Solution Fit

- Completion of co-development of Product QRs with Nodal Agency and validation of Product concept to address desired scope.
- Phase-1 of co-development of QA/Certification Plans with Nodal Agency, reviewed and validated by DGQA/DRDO Labs.

#### Technology Viability

- Demonstrate PoC to validate functional fitness of the core technology developed/applied.

#### Product Viability

- Completion of lab testing to demonstrate the feasibility of solution to address the core areas of the QR.

## 2. Operations

### Incorporation

Incorporation of a Company, DIPP Registration, and Completion of exhaustive scope of registration, license, and approvals required Defence R&D/Production, Company Law and State Govt. Laws.

### Team Building

- Good progress achieved in the planning and hiring of top technical talent most capable of delivering the desired military-grade product
- Good progress achieved in the Constitution of Advisory Board with reputed experts.

### Technical Operations

Comprehensive list of suppliers, providers, and consultants with approved contracts, required to develop military-grade product.

## 3. Financials & Investment

### Funds for Matching Contribution

Guaranteed source of funds in the form of Grants or Investments from external sources, including the Partner Incubator's Grants or Seed investments.

Total Matching Contribution in the form of Cash, In-Kind and Past-Expenditures should be minimum 2 times the funds sought under the SPARK Grant.

- Min. 50% of the cash portion of matching contribution transferred to the company.

### Business Plan

Sound planning of technology/product, market, and business strategy to emerge as a fully capable indigenous defence enterprise.

**External Investments**

Proof of equity/debt investments, enabling scaling up from prototype to defence grade production.

At any stage during the tenure of the EiR program, should the EiR (SPARK Winner) achieve all of these outcomes in a manner that is acceptable to the PMU of DIO, and the Grant Monitoring Committee constituted by the DIO, and with express approval from the CEO of DIO, then the EiR shall be considered for graduation from the Pre-Incubation track to the Acceleration Track. At this stage the EiR program shall be terminated and the SPARK Grantee shall be taken through the mainstream SPARK Grant procedures, to qualify for the full grant.

**Differential Design for EiR Categories**

#	Decision/Category	Experienced Professionals
1	EiR Stipend Amount (Aggregate)	Max Rs. 3.0 Lakhs
2	EiR Stipend Amount (Monthly)	Max Rs. 30,000
3	EiR Duration	Max 12 months
4	Max Funding from SPARK Grant offered during EiR program (% of maximum funding offered under SPARK Grant)	30% of Maximum permissible SPARK Grant
5	Residential Incubation	Fully Residential basis is optional

# 6

## Terms & Conditions

Support them to graduate into competent employees to become part of other iDEX startups, where their skills, developed modules, and experience gained can be exploited in the larger interests of iDEX program.

### 1. Project Management & Supervision

The EIRs irrespective of the category they belong to are expected to report to the EiR Program Manager for iDEX appointed by the respective Partner Incubator and at all times must be available for review by the PMU of DIO. The Program Manager shall oversee all their activities and act as the bridge between the EiR and the PMU of DIO. The EiR shall treat the Program Manager as the supervisor, offering their fullest support and ensuring that there is a professional relationship maintained at all times during the tenure of the EiR program. The role of the Program Manager is not to micromanage the daily activities of the EiR but only to make the process more effective and well coordinated, and to ensure timely and complete reports are sent to the PMU of DIO on a regular basis. The EiR shall be adequately responsible and self managed.

### 2. Mentoring by Experts

In addition to the Program Manager, the EIRs shall be assigned an EiR Mentor nominated by the Partner Incubator in consultation with the PMU of DIO. The EiR Mentor who shall act as the subject matter expert and guide the EiR in all aspects concerning the concept, technology, design, development of the prototype for the Reference Product Innovation. The Program Manager shall go with the advice and recommendations of the EiR Mentor in all matters concerning the EiR during the tenure of the EiR program. The EiR Mentor based on the need shall connect the EiR to other experts and facilitate other supports that shall help the EIRs accelerate their progress and achieve the desired milestones and deliverables in a timely manner.

### 3. Termination during the EiR program, initiated by the EiR

If at any stage during the tenure of the EiR program, the EiR decides to exit the program for any unavoidable reason(s), which is duly reviewed and accepted by the PMU of DIO and found genuine and acceptable, after taking the opinion of the respective PI, then the PMU after seeking approval of the CEO of DIO shall allow for such a premature exit from the program. Such cases shall be referred to as Authorised Voluntary Terminations, whereas every other form of exit which is either not approved or arising from cases of absentia, absconding and/or other forms of incompetence etc. shall be treated as **Unauthorised Voluntary Terminations**.

**Authorised Voluntary Terminations:**

In these cases, the DIO shall strive to offer the EiR as smooth an exit as possible, and this shall be modelled on the same lines of employed professionals leaving a company after serving a notice period with honour, and commitment, befitting good professional ethics. The primary objective of managing such cases for the PMU of DIO shall be to safeguard the interest of DIO to the extent of ensuring that the funds offered to the EiR in the form of stipend and grant are not wasted. To do so, the PMU of DIO with the support of the respective PI shall come up with a transition plan and the EiR Notice Period, which will have to be duly served by the EiR providing fullest support to the PI in completing all the administrative tasks in ensuring a smooth conduct of the transition plan. In the case of the EiR not meeting the expectations of the transition plan, then the case shall be treated as Unauthorised Voluntary Terminations. The EiR Notice Period shall not exceed 30 calendar days from the date of formal submission of the Voluntary Termination Letter by the EiR to the PI. During the EiR Notice Period, the EiR stipend shall not be paid. All decisions concerning these cases shall depend on the performance and progress achieved by the EiR up until when termination has been initiated, the progress and performance so assessed shall influence the exact nature of the EiR transition plan and notice period and other aspects on a case-to-case basis.

The transition plan shall include any or all of these following decisions and corresponding activities to safeguard the larger interest of DIO:

- i. Technology Transfer to another iDEX Startup involved in the challenge, either directly or through the PI, combined with a detailed documentation of the technical scope of work planned, progressed, or completed during the tenure of the EiR program.
- ii. Complete audit, stock-taking and transfer of all the physical, digital, documentary materials borrowed, procured, created, or generated by the EiR, including registered/granted as Patents or other forms, all technical deliverables, drawings, designs, softwares, knowhow, prototypes, and all other forms of documents or materials in digital or in print format, over to another iDEX Startup or the PI.
- iii. Signing of NDA and/or other agreements as may be deemed fit by the DIO, to safeguard the interests of privacy, confidentiality, and other factors concerned with the safeguarding of national security.
- iv. Statement from EiR of complete surrender of all authorisations, entitlements etc. effected either directly or indirectly for the purpose of providing access, information, data etc.
- v. No Dues Certificate shall be presented by the PI and approved by the PMU of DIO, after due transfer of the funds or payments not utilised by the EiR back to the PI.

#### **Unauthorised Voluntary Terminations**

In these cases, the DIO shall issue a legal notice to the EiR demanding repayment of the amount equal to the financial support offered in the form of EiR Stipend and EiR Grant along with the fair market value of the resources and services offered from the PI or other entities engaged by the PI or the DIO to support the EiR. On failing to do the needful within the stipulated timeframe, the DIO shall issue widely published notifications about the EiR in a manner that will potentially damage the professional reputation of the EiR and prevent the EiR from gaining grant, investment or employment in the future.

#### **4. Termination during the EiR program, initiated by the PMU of DIO**

If at any stage during the tenure of the EiR program, should the respective PI and/or the PMU of DIO observe that the progress or performance of the EiR is not meeting expectations despite sufficient notifications issued to the EiR, and suitable steps taken thereof to support the EiR, the PMU after consultation with the PI shall decide to terminate the EiR program and mandate a premature exit

from the program. All these cases shall be handled as per the guidelines stated for Authorised Voluntary Transitions, with some modifications as may be deemed necessary on a case-to-case basis.

## **5. Prototype Development Project Plan**

On admission to the EiR program, within the first 30 calendar days the EiR under the guidance of the EiR Mentor shall submit to the EiR Program Manager for review and approval by the PMU of DIO, a detailed project plan and budget for the development of a production-ready prototype of the Reference Product Innovation. This plan should describe the following aspects in sufficient detail:

### **Minimum Usable Prototype (MUP) Concept**

Description of the minimum scope of features and functionality that shall be designed and developed in order to be ready for conducting end-user trials, deployment and for rigorous testing and validation of the solution. The basic UI/UX that shall be necessary for the end-user to trial/test the MUP shall also be defined. Other details regarding the choice of technology and technical specifications of the MUP, the equipment and tools required for prototyping, resources and materials required in the form of components, supplies, samples etc. shall be described in detail.

### **Mentor Office Hours**

Each EiR shall be entitled to a maximum of 3 hours/week of 1-on-1 mentoring with the EiR Mentor or other experts on need basis and as recommended by the EiR Mentor. The EiR Program Manager shall fix appointments based on the availability of the EiR Mentor and ensure smooth functioning of these meetings.

### **Assessment Milestones & Deliverables**

Under the guidance of the EiR Mentor, the EiR shall define the interim milestones to review their performance and progress achieved in the prototyping program. For each of these milestones the specific deliverables in terms of the MUP design, functionality, UI/UX etc. shall be described. For each of the milestones, a status report shall be prepared by the EiR, and shall be submitted to the EiR Program Manager for review with the EiR Mentor, before being presented to the PMU of DIO. The action items recommended by the EiR Mentor shall be duly implemented by the EiR within the specified time period.

### **Budget for Prototyping Grant**

The budget for the various costs involved in the prototyping activity shall be estimated and approved by the EIR Mentor, with the indication of the specific costs and the budget for each cost item. The EIR Program Manager shall ensure that the lowest possible rates are negotiated with the respective vendors and also check with Innovation Mentor for the possible reuse of components or supplies that are already available.

## **6. Prototyping Expenses (Cash Support)**

As part of the EIR program, the Partner Incubator shall offer cash support for all expenses incurred during the process of designing and developing prototypes, using funds offered by the DIO under the SPARK Grant transferred to the Partner Incubator. The expenses covered shall only include the purchase of components & supplies for prototyping activities, the charges to be paid to vendors/suppliers for the manufacturing, assembling, testing or certification of the prototype, the expenses incurred in the travel & logistics involved in undertaking field visits, factory visits, customer trials & support etc.

The EIR Program Manager shall seek the approval of the EIR Mentor, with the indication of the specific costs and the budget for each cost item. The EIR Program Manager shall use this budget as the basis for approving all payments for the expenses incurred, and the specific approval of the Innovation Mentor is required for every payment. The EIR shall either pay for the expenses and claim a reimbursement from the Partner Incubator or shall submit the bills for payment directly by FORGE to the vendor/supplier. The EIR Program Manager shall determine the payment model based on the specific nature of each expense/cost item.

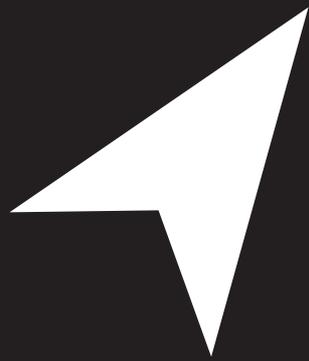
**Note:** If the progress achieved by the EIR during the program is not meeting the expectations despite repeated efforts to improve the performance, then the financial support shall be terminated, and any components, supplies or parts purchased by the EIR shall be duly returned back to the Partner Incubator.

## 7. IPR

During the EiR program all such IP (including registered/granted as Patents or other forms, all technical deliverables, drawings, designs, softwares, knowhow, prototypes, and all other forms of documents or materials in digital or in print format) created by the EiR independently, or in collaboration with experts assigned by the PI or directly engaged by the EiR and in any other manner possible, shall remain the joint property of DIO. This joint ownership of the IP by the DIO shall not under any circumstances be overridden by any forms of commitment or contractual obligations the EiR may have entered into with third-parties with or without the explicit consent and approval of DIO, before or during the tenure of the EiR.

It is assumed that the EiR shall appropriately create/modify all such IPR agreements related to sharing, ownership, licensing, transfer etc. to suitably include DIO as the joint owner too. All such IP agreements shall unconditionally and without exceptions abide to the IPR conditions laid out in the SPARK Grant agreement. On graduation to the Accelerator track, the IPR guidelines as have been outlined in the SPARK Grant Agreement shall take effect, and the ownership of the IP as granted or extended to DIO shall be substituted by the terms and conditions as defined in the SPARK Grant Agreement. This approach is recommended on the basis that upon successful graduation to the Accelerator track, the SPARK Grantee deserves to be treated on par with those that were selected directly to the mainstream accelerator track.

In the case of the SPARK Grantee not achieving the desired progress during the EiR programs and therefore not graduated to the Accelerator track, or if the SPARK Grantee voluntarily leaves before the due completion of the EiR program or doesn't accept the terms and conditions to be complied with for admission to the Accelerator track, and/or in other circumstances of termination of the EiR program, all IP generated during the EiR program shall become property of DIO. The decision regarding DIO allowing the EiR to possess continued custody, access or ownership of the IP shall be made by the CEO of DIO after seeking necessary approvals.



# **Annexures**

**Annexure A | Mol between iDEX-DIO and DIU, USA**

**Memorandum of Intent**

**Between**

**Innovations for Defence Excellence (iDEX)  
Ministry of Defence, Republic of India**

**and**

**Defense Innovation Unit (DIU)  
Department of Defense, United States of  
America**

**Concerning**

**Defense Innovation Cooperation**

**Innovations for Defence Excellence (iDEX),  
Ministry of Defence, Republic of India**

**and**

**Defense Innovation Unit (DIU), Department of Defense,  
United States of America (hereinafter referred to as  
"Participants");**

As a tangible demonstration of the growing U.S.-India strategic partnership, the U.S. Department of Defense (U.S. DoD) and Ministry of Defence (IMOD) of the Republic of India seek to increase cooperation on defense innovation and take steps to enable deeper collaboration in the areas of innovation, science, and technology ecosystems between the U.S. DoD and the IMOD.

The U.S. DoD and the IMOD recognize that defense-relevant technologies increasingly originate in the commercial technology base, underscoring the mutual interest in developing more proactive and responsive mechanisms to identify and leverage these dual-use technology opportunities. In order to adapt to this emerging technology landscape and better harness available sources of innovation potential, the U.S. DoD's Defense Innovation Unit (DIU) and the IMOD's Innovations for Defence Excellence (iDEX) commit to explore opportunities to collaborate in our mutual efforts to identify and integrate commercial technology into our respective defense systems more rapidly and efficiently as well as strengthen the defense innovation landscape in both countries.

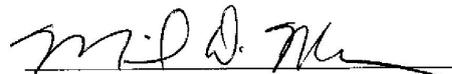
## Annexure A | MoI between iDEX-DIO and DIU, USA

This collaboration will enhance the capacity of the U.S. DoD and the IMOD to identify and source solutions to military requirements by accessing cutting-edge commercial technology through non-traditional processes. This supports broader security and defense collaboration objectives as set forth in the 2015 Framework for the India-U.S. Defense Relationship and the 2015 Joint Strategic Vision for the Asia Pacific and Indian Ocean Region.

It is not the intent of the Participants that this Memorandum of Intent be considered legally binding under international law. This document is not an authority to perform any work, award any contract, transfer funds, or otherwise obligate either Participant in any way to make or provide any financial or non-financial contribution to the other Participant for any purpose. Any collaborative projects or activities that may be identified in this process may only be carried out under separate agreements or arrangements entered into by the Participants.



On behalf of the  
Innovations for Defence  
Excellence (iDEX), Ministry  
of Defense, Republic of  
India



On behalf of the Defense  
Innovation Unit (DIU),  
Department of Defense,  
United States of America

Signed at New Delhi and Washington D.C. on 06.09.2018 in  
two originals in English.

## Annexure B | List of DISC Challenges

S. No.	DISC	Challenges
1	DISC 1	Individual Protection System with built-in sensors
2	DISC 1	See through Armour
3	DISC 1	Carbon Fibre Winding (CFW)
4	DISC 1	Active Protection System (APS)
5	DISC 1	Secure hardware based offline Encryptor Device for Graded Security
6	DISC 1	Development of 4G/LTE based Tactical Local Area Network
7	DISC 1	Development of Advanced Technology Based Desalination System (Water Purification) and Bilge Oily Water Separation System
8	DISC 1	Artificial Intelligence in Logistics & SCM
9	DISC 1	Unmanned Surface and Underwater Vehicles
10	DISC 1	Remotely Piloted Airborne Vehicles
11	DISC 1	Laser Weaponry
12	DISC 2	GPS Anti Jam Device
13	DISC 2	Data Analytics for Air Trajectory
14	DISC 2	Illegal usage of Drones
15	DISC 2	RADAR IQ Signal Generator





