

IITM Pravartak technologies Foundation
Hub Governing Body Meeting – 2

Date: Jan 18, 2021

Time: 10:00 AM to 11:00 AM

Mode: Electronic Mode

Members Present:

- Prof. Bhaskar Ramamurthi, Chairman, Director, IITM
- Prof. Ravindra Gettu, Member, Dean, ICSR, IITM
- Shri Murali Mohan, Member, DST, Mission Director, NM-ICPS
- Shri Bhaskar Bhat – Member– Industry Representative
- Dr G. Venkatesh- Member– Industry Representative
- Dr Kumar Sivarajan, Member – Industry Representative
- Prof. David Koilpillai – Member Dept. of Elec. Engg. IIT Madras
- Prof. HSN Murthy - Member Dept. of Elec. Engg. IIT Madras
- Prof. Devendra Jalihal – Member Secretary – Dept. of Elec. Engg. IIT Madras - Principal Investigator
- Prof. V. Kamakoti – Faculty Incharge – Associate Dean, ICSR

1. The Chairman welcomed the members for the HGB. He invited Prof. V. Kamakoti to make the presentation of the agenda items.
2. Prof. V. Kamakoti informed that the tri-partite agreement between DST-IITM Pravartak and IITM was signed Nov 09, 2020. The financial budget sanctioned by DST is as follows:

Budget Head	Budget in Rs. Crores					
	1Y	2Y	3Y	4Y	5Y	Total
Recurring	13.25	30.00	30.00	24.75	13.00	111.00
Non-Recurring	9.00	15.00	20.00	10.00	5.00	59.00
Total	22.25	45.00	50.00	34.75	18.00	170.00

3. He briefed the committee about the year-wise expectations of DST as stated in the following tables were presented.

S No	Target Area	Targets					Total
		1 st Yr	2 nd Yr	3 rd Yr	4 th Yr	5 th Yr	
Technology Development							
(a)	No. of Technologies (IP, Licensing, Patents etc)	5	11	20	20	20	76
(b)	Technology Products	3	5	10	10	10	38
(c)	Publications, IPR and other Intellectual activities	25	50	75	75	91	316
(d)	Increase in CPS Research Base (#People involved)	10	40	50	75	75	250

Entrepreneurship Development	Y1	Y2	Y3	Y4	Y5	Total
(a) CPS-Technology Business Incubator (TBI)	1	0	0	0	0	1
(b) CPS-Start-ups & Spin-off companies	4	6	14	14	14	52
(c) CPS-GCC - Grand Challenges and Competitions	1	1	1	1	1	5
(d) CPS-Promotion and Acceleration of Young and Aspiring technology entrepreneurs (CPS-PRAYAS)	1	0	0	0	0	1
(e) CPS-Entrepreneur In Residence (CPS-EIR)	2	3	8	10	10	33
(f) CPS-Dedicated Innovation Accelerator (CPS-DIAL)	1	-	-	-	-	1
(g) CPS-Seed Support System (CPS- SSS)	1	-	-	-	-	1
(h) Job Creation	100	1400	4000	4000	4000	13500

Human Resource Development	Y1	Y2	Y3	Y4	Y5	Total
(a) Graduate Fellowships	15	25	100	100	100	340
(b) Post Graduate Fellowships	5	17	20	20	0	62
(c) Doctoral Fellowships	2	15	8	0	0	25
(d) Faculty Fellowships	0	3	3	0	0	6
(e) Chair Professors	0	3	3	0	0	6
(f) Skill Development	170	190	200	220	240	1020

International Collaboration	Y1	Y2	Y3	Y4	Y5	Total
	2	2	2	2	2	10

4. Details of the following technical activities undertaken by Pravartak technologies were presented
 - a. 50 Week programme on Large Scale data Driven System Design was launched on Oct 26, 2020. Targeted 50 Participants; Registered 68 Participants.
 - b. 3 Day (2.5 hrs per day) webinar on Digital technology and Artificial Intelligence for precision agriculture jointly by Pravartak and Canadian Super cluster with Academia and Industry participation from both ends. TCS, Mahindra, Murugappa, RF Wave, Teramera, Farmers Edge, Eplane and many others. (Oct 23, 26 and Nov 6, 2020)
 - i. Followup:
 1. Regenerative Agriculture Stack Architecture (RASA) - to double farmer's income – Effort to be taken up by IITM-Pravartak and Canadian Digital Supercluster involving Academia and Industry. Efforts made for 3 states of India to sign up.
 2. Submitting a joint proposal to CIFAR for the AI and Data Analytics part of RASA
 - c. Launch of a 10-day targeted training (Bharat-CISO) for Information Security Officers handling critical infrastructure jointly between Rashtriya Raksha University, Gujarat and IITM Pravartak Technologies Foundation between 18 Jan 2021 and 30 Jan 2021.
5. The HUB interaction model (Appendix-04) was tabled and approved by HGB.

6. The following three MoUs were tabled for information of HGB.
- Indo-Canadian Tripartite MoU between IITM–Pravartak Technologies Foundation, Asia Pacific Foundation, Digital Supercluster (Appendix-01)
 - CSR Grant MoU with Samsung for furnishing the leased space at Research Park including equipment worth INR 2 Crores. No financial transaction (**Appendix-02**)
 - Rashtriya Raksha University, Gandhinagar, Gujarat (Ministry of Home Affairs) – (Appendix-03)

It was also informed to HGB that all MoUs are vetted by IIT Madras Legal and approved by IITM Pravartak Board

7. It was proposed to invite the following as additional members of The Technology Management Committee.
- Shri. Nikhil Malhotra – Chief Innovation Officer, Tech Mahindra (Appendix-05)
 - Dr. Mohit Dubey – CEO, Atal Innovation Centre, Maharashtra Institute of Technology University, Pune. (Appendix-06)
 - Shri. Ganapathy Venugopalan – CEO of Axilor Ventures (Appendix-07)

The HGB approved the same.

8. It was proposed that a token honorarium of Rs. 5000/= per session of two hours be paid to members of the Technology Management Committee for their services. The same was approved by HGB.
9. It was also informed that the Technology Management Committee will meet once every quarter.
10. It was proposed that a total of 11000 Sq. ft be taken on a long term lease from IITM Research park. It was also informed that an amount of around Rs. 140 lakhs towards rent will be saved in 5 years if this long term lease is taken. The following tables were presented to justify the above.

With Lease – Total debit at end of 5 years

Item	Amount
One time payment	4,77,01,262
Interest @4% for 5 years	1,05,41,815
Total	5,82,43,077

Includes 6 X 4wheeler and 12 X 2 wheeler parking. Long Term lease mandatory to get CSR for furnishing

Without Lease – Cost paid for 5 years for furnished space

Item	Amount
80/= per sq ft. with 10% annual escalation + 7/= per sq ft. monthly Maintenance + 2000/= and 500/= per 4W & 2W monthly parking resp	7,04,25,120
Interest @4% for 5 years for 10 month advance	21,36,663
Total	7,25,61,783

The HGB approved that the long term lease be taken and the amount be spent from Non-recurring head of the DST Funds.

11. Shri. Bhaskar Bhat suggested that the Finance committee should meet regularly. It was agreed that the meeting of the Finance committee will be scheduled before every board meeting.
12. Shri. Bhaskar Bhat suggested that a calendar for the HGB, Technology Committee, Finance Committee and IITM Pravartak board be made in advance and shared. This was agreed.
13. The Chairman thanked the members for their presence.



Prof. Bhaskar Ramamurthi
Chairman, Board of IITM Pravartak Technologies Foundation





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This Memorandum of Understanding (“MOU”) is effective as of November 6, 2020.

BETWEEN

Canada’s Digital Technology Supercluster,

IITM-Pravartak Technologies Foundation,

AND

the Asia Pacific Foundation of Canada

Each a “Participant” and collectively the “Participants”

WHEREIN the Participants recognize the mutual benefits of institutional collaboration on research and events to explore the opportunity for industry and research collaborations between Canada and India in digital technology innovation and the optimization of data for the benefit of private and public sector driven solutions to complex societal issues;

WHEREIN the Participants consider the present period an optimal time to deepen cooperation to leverage respective networks and expertise;

AND WHEREIN the lead Participants are Canada’s Digital Technology Supercluster and IITM-Pravartak Technologies Foundation, with the Asia Pacific Foundation of Canada as an advisory participant.

(1) PURPOSE OF THIS MOU

1. The purpose of this MOU is to formalize an intent to collaborate on events and network facilitation to explore opportunities for industry and research partnerships between the India and Canada academia, private and public sectors, with an emphasis on:
 - a. Exploring technology interventions in transformative sectors and subsectors, starting with precision agriculture;
 - b. Discussing the opportunity for data collaboration and bilateral governance mechanisms to allow for the application of machine learning and AI across datasets in these transformative sectors and subsectors; and,
 - c. Building long-term strategic relationships on data and AI between Canada and India more generally.



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2. This MOU is not intended to create any legally binding obligations, and does not create any relationship of employment, agency, partnership or joint venture between the Participants.

(2) SCOPE OF COOPERATION

1. The primary activity associated with this MOU will be the hosting of workshops to advance the purpose outlined above and to develop the appropriate governance frameworks for the exchange of data and to allow for the flow of cross-border funding. The audience of these workshops are government, academic and industry representatives from India and Canada.
2. The intended outcomes of the workshops are to:
 - a. Identify international partnerships to extend specific, pre-identified “case study” projects;
 - b. Build a network of solution-driven, interdisciplinary stakeholders from India and Canada to explore partnership opportunities more broadly, with the purpose of scaling business opportunities; and,
 - c. Advance frameworks, practices, tools and policies related to responsible data governance, AI and other emerging technologies.
3. A set of workshops in October and November 2020, on precision agriculture, serve as the foundation for this intention to collaborate. This MOU signals an intent to further the opportunities identified as part of this workshop series, and, replicate the series in the future on further topics of interest.
4. The Participants will identify opportunities to collaborate on further research and events as appropriate.
5. Each Participant will identify a contact to facilitate exchange and cooperation.

(3) FUNDING

1. Unless otherwise agreed, Participants will be responsible for their own expenses arising from exchange and cooperation under this MOU. Participants may jointly explore funding opportunities to support the purpose of this MOU.



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(4) TERM AND AMENDMENT

1. This MOU will come into effect on the date first written above and will remain in effect three (3) years. This MOU can be renewed by mutual agreement of the Participants.
2. A Participant may terminate this MOU by giving three (3) months written notice to the other Participants. Termination of this MOU will not affect the completion of activities initiated before the notification but not yet completed, unless otherwise decided by the Participants.

Signed on November 6, 2020 by:

Canada's Digital Technology Supercluster

DocuSigned by:

Sue Paish

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Name: Ms. Sue Paish

Date: November 6, 2020

Asia Pacific Foundation of Canada

DocuSigned by:

Stewart Beck

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Name: Mr. Stewart Beck

Date: November 6, 2020

IITM-Pravartak Technologies Foundation

DocuSigned by:

Prof. V. Kamakoti

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Name: Prof. V. Kamakoti

Date: November 6, 2020

Memorandum of Understanding
between
Pravartak Technologies Foundation
(Section 8 Company under Indian Institute of Technology Madras)
and
Samsung India Electronics Private Limited

This Memorandum of Understanding (MOU) has been made on **15th January 2021** by and between **Pravartak Technologies Foundation**, Technology Innovation Hub, incorporated as a Section 8 company, hosted by Indian Institute of Technology Madras (“IIT-M”), registered under Companies Act 2013 having its Registered Office at its registered office at module no.E1-07 , 1st Floor, Block - E IIT Madras Research Park, Kanagam Road Taramani, Chennai – 600113, through its authorized signatory, **faculty-in-charge, Prof. V. Kamakoti** (herein referred to as “Pravartak”), which expression shall, unless it be repugnant to the context or meaning thereof, be deemed to mean and include its successors, legal representatives, heirs, executors, nominees and assigns) of the First part

and

Samsung India Electronics Private Limited, a Company incorporated under the provisions of the Companies Act, 1956 and having its registered office at 6th Floor, DLF Centre, Sansad Marg, New Delhi – 110001, through its authorized signatory **Mr Jinsung Lee, CFO – SRI Delhi**, a division of Samsung India Electronics Private Limited (hereinafter referred to as “SIEL) the party of the Second Part

WHEREAS:

- A. That all obligations/duties which are to be fulfilled by SIEL shall be fulfilled by SRI-D, (hereinafter referred to as “SRI-Delhi”) a division of SIEL and which is running its operations from Plot No-2A, Sector-126, Noida.
- B. Pravartak, SIEL and SRI-D are hereinafter individually referred to as the “Party” and collectively referred to as the “Parties” in the rest of this MOU.

Background

The National Mission on Cyber Physical System taken up by the Department of Science and Technology has awarded the project for setting up a Technology Innovation Hub in Sensors, Networking, Actuators and Control Systems (SNACS) to IIT-M.

IIT-M, as per the terms of award of this project, has completed setting up a Section 8 (Not-for-Profit) company named “IITM Pravartak Technologies Foundation” which will run the “Technology Innovation Hub for SNACS”. The incorporation of the Section 08 Company

with license for operation has been approved by the Ministry of Corporate Affairs, Govt. of India.

A total of 50 Faculty from 11 out of 16 Departments of IIT-M have shown interest in participating in this mission. The proposal has listed 10 product frameworks spread across multiple disciplines of engineering. Those that are of interest to Samsung include:

1. Next-gen indigenous secure, intelligent and reliable compute ecosystem
2. Open-source scalable data analytics platform for IoT applications with AI/ML interface
3. Next-gen indigenous, secure, high bandwidth & resilient wireless communication networks for IoT deployments
4. Inferential lens-less cameras
5. Collaborative Telerobotics
6. Distributed Acoustic Sensing Systems (DAS)

The present MOU addresses the same to educate the researchers, students & incubators, and to empower them for better technological change.

This need was expressed for taking the collaboration of academic institutions & industries to a higher level by providing support in the relevant areas agreeable to IIT-M, thereby preparing the technological requirements of the future. This is expected to be achieved in interest of the manpower, by harnessing both, the strengths of SIEL in terms of industrial knowledge and the strengths of IIT-M in terms of academic knowledge and guidance.

To fulfil the objectives of Research, Academic, and Incubator engagements, IIT-M has agreed and permitted to establish a Samsung Research Lab at Pravartak (“Research Lab”).

The Research Lab would be able to achieve:

1. Involving Multiple Institutions
2. Human Resource Development
3. Productization and Commercialization
4. Incubation of Start-ups
5. Patents (open-source by IIT-M)

The Research Lab will bring expertise from core areas of Data Sciences, Machine Learning (specifically learning at edge), Communications & Networking, Control Algorithms, Robotics, Mechatronics, Sensors, Compute Hardware (Processor, Memory), Low power/power-aware circuit design, Embedded Software Development, Cryptography (Light-Weight cryptography for edge devices), Data analytics platform, Distributed algorithms for coordinating, computing and communication on a large number of devices.

The present MOU addresses the Research, Academic collaboration and Incubation activities at the Research Lab with Pravartak.

1. OBJECTIVE OF THE MOU

1.1. Research Lab

- A) In order to strengthen and extend SIEL's association with Pravartak/IIT-M, SIEL is committed on research collaboration in the areas of Artificial Intelligence, Data Analytics, Augmented Reality, Information Retrieval, Intelligence, Computer Vision, IoT framework & security, sensors, cryptography etc.
- B) SIEL intends to interact with members of the Research Lab specifically related to on-going research activities in Systems Intelligence domain and expand the collaboration activities in other areas of mutual interest.
- C) B.Tech/ M.Tech/ MS(R) project or Thesis project with research problems shall be offered to Pravartak/IIT-M PG students for duration of 1 year.
- D) Technology ~~sensing~~ forecasting is one of the prime activities to be done in order to keep pace with the current technical advancements; therefore, SIEL proposes to utilize the research collaboration activities with students at Research Lab for generation of technology ~~sensing~~ forecasting reports.
- E) The research lab would house an incubation facility in Pravartak for start-ups/business setups to conceptualize their business ideas.

1.2. Research lab for Academic Collaboration

- A) SIEL will support running industry oriented courses and provide the education & lab projects to students as agreeable to Pravartak keeping in forefront the interest of the students and that for purpose of providing students, an education as per the need of the market.
- B) The curriculum of courses shall be designed/fixed by Pravartak. Pravartak, if required, may seek support or guidance from SIEL in designing the curriculum.
- C) SIEL would provide tutorials of some modules, to be mutually decided between Pravartak and SIEL.
- D) Evaluation of the students registered for the courses would be done by Pravartak as per their norms.

- E) That for the purposes of experimentation/projects in Innovation Lab, SIEL shall provide equipment to Pravartak on non-returnable basis, details hereof, are mentioned in Annexure-A of this MOU with the mutual understanding that Pravartak hands over such Equipment to the point of contact/Faculty in Pravartak (academic coordinator) for space/laboratory identification, installation, deployment for usage on terms agreed between Parties and upkeep/maintenance.

2.2 SCOPE OF COLLABORATION

The scope of the MOU will include the following activities by Parties:

(a) Pravartak

- i) Pravartak will coordinate industry-oriented academic courses, which will be decided mutually between the parties. The parties would carry out research collaboration of future technologies developed at/by Pravartak.
- ii) The laboratory setup at the space provided by Pravartak is open to SIEL for interactions with Pravartak in the areas (not restricted to) as mentioned below:-
 - a. Carry out research in areas including, but not limited to
 - Data Sciences
 - Machine Learning (specifically learning at edge)
 - Communications & Networking
 - Robotics
 - Sensors
 - Computing Hardware (Processor, Memory)
 - Embedded Software Development
 - Cryptography (Light-Weight cryptography for edge devices)
 - Data analytics platform
 - Distributed algorithms for coordinating, computing
 - b. Execution of minor/major laboratory projects during industry oriented academic course for Pravartak students
 - c. Offering of specialised training programmes for students
 - d. Extending facilities for access by start-ups business setups in the Technology Business Incubation Unit in Pravartak

(b) SIEL

- i) SIEL shall support the following
 - a. Joint offering of industry-oriented courses under supervision of the academic coordinator from IITM.
 - b. Generate joint technology-forecasting reports.

- c. One year Master's Thesis projects with an option to utilize the SRI-Delhi research facility for the students involved.
- d. Provide equipment that can be utilized by students of IITM and members of Pravartak and maintain the same as per Samsung standards, during the tenure of his MOU.
- e. Any other mutually agreed mode of collaboration

Specific support model from SIEL, proposed during the initial stages of this MoU are listed in Annexure – 2 which shall continue to evolve based on the progress.

(c) Performance metrics

The academic collaborative activities shall be reviewed periodically by a Steering Committee – normally once in six months. The Steering Committee shall have following members of the board of Pravartak:

From Pravartak

- 1) The Faculty In-charge (Prof. V. Kamakoti).....
- 2) The Principal Investigator (Prof. Devendra Jalihal).....
- 3) Academic Representative (Prof. H. S. N. Murthy).....

From SIEL

- 1) MD, SRI-Delhi
- 2) Mr. Jinsung Lee, Principal Professional, SRI-Delhi
- 3) Mr. Pankaj Mishra, VP, SRI-Delhi

3. NON-EXCLUSIVITY

The relationship of the Parties under this MOU shall be non-exclusive and both the Parties including their affiliates, subsidiaries and divisions, are free to pursue other agreements or collaborations of any kind with any third party.

4. CONFIDENTIALITY

- A. The Parties shall not divulge (including displaying or duplicating) any materials or information received from the other Party to any outside party except for the sole usage as outlined in the scope of activities stipulated in the MOU. This precludes any information already available in the public domain.

- B. Both the Parties agree not to publish any press release concerning joint activities without prior consent and agreement of each Party as to the content of such a document.
- C. The faculty involved from IIT-M & Pravartak will receive/disclose Confidential Information. They will be responsible for non-disclosure of the Confidential Information received from SRI-Delhi.

5. PROPERTY RIGHTS

All rights, title and interest including but not limited to intellectual property rights to the contents, manuals, technical-know-how, tools etc. for the program developed under this MOU by any Party shall vest with the Party, who has developed the same. None of the Party can use the name of other Party to further its' own business or in any dealings with a third party except with expressed written consent of the other Party for purpose pre-stated.

6. NAMING RIGHTS

A suitable naming of the created facility will be decided jointly by SIEL and IITM-Pravartak.

7. TERMS AND TERMINATION

The MOU shall come into force from the Effective Date and will remain valid for a period of 3 years (reckoned from Effective Date), **extendable for additional 2 years, upon review in the third year**. The validity may be extended thereafter by mutual agreement in writing signed by both the Parties with or without any change in the terms. SIEL or Pravartak, at any time during the term of this MOU may terminate this MOU by giving thirty (30) days' notice to the other Party of their intention to do so. However, such termination shall not be effective till the time a particular on-going course at that time, is completed. Subject to above, both the Parties agree that the terms of Clause No's-3, 4, 5, 7, 8 and 9 of this MOU shall survive, irrespective of the MOU being in full force or effect or it being terminated, by efflux of time or as mentioned in this Clause No-6.

7. AMENDMENTS

If there is a need, the Parties may agree to amend the terms and conditions of this MOU in writing so as to reflect such a need.

8. DISPUTE RESOLUTION

Any difference arising out of or in connection with this MOU ('Dispute') which cannot be resolved amicably within the first 30 (thirty) days shall be referred for resolution to the signatories to this MOU within the next 30 days.

9. GOVERNING LAWS

This MOU shall be governed and construed in accordance with the laws of India, and Courts of New Delhi shall have exclusive jurisdiction to decide any dispute arising out of this MOU.

In witness whereof the Parties have executed this MOU on this, the __15th day of _____ 2021 and shall be effective from __th day of _____ 2021 "Effective Date".

By

By

Prof.
Director
On behalf of
Pravartak Technologies Foundation
IIT-M

Mr. Jinsung Lee
CFO - SRI Delhi
On behalf of
Samsung India Electronics Private Limited

Witness:

1. _____

1. _____

ANNEXURE-A

The list of equipment that has been planned for the Research Lab at Pravartak in Calendar Year 2021 is as follows :

(May be modified)

S. No.	Item	Qty. (Requested)
1	Amazon Web Services (AWS) subscription packs with different configurations	20
2	High end server with GPU cards	25
3	IP-Addressable 16-port HDMI KVM Switches	8
4	Samsung 65" 4K UHD/LFD	25
5	Network Storage Capacity	1,000 TB (1 No.)
6	Network Analyzers	3
7	10GigE Backbone routers	3
8	10GigE 24-port switches	12
9	Network Firewall	2
10	Intelligent Display System Modules	50
11	High Bandwidth Oscilloscope with 16 Channels for Memory Array testing with Digital storage	4
12	Intrusion Detection System	1
13	Samsung Desktop Systems with latest monitors	125
14	Samsung Laptops for field work	50
15	Micro LED Wall	1
16	Metallic 3D Printer	1
17	Portable Oscilloscopes	5
18	RF Synthesiser	1
19	Protocol Analyzers, Data Acquisition Systems	6
20	Arbitrary wave form generators (AWG5204/7000)	5
21	Hardware Inhouse prototype assembly and Board bringup setup	1
22	CAD design tool licenses (Digital, Analog and mixed signal hardware design)	10 licenses

Note:

The above mentioned devices are part of Super-Set list, required for Lab setup at Pravartak.

A sub-set of devices can be obtained from the above mentioned device list after discussion with faculty and inspection of lab requirements Pravartak.

SIEL shall endeavour to provide above part of the Equipment during the year 2021.

Annexure-2

Details of specific support to be offered by SIEL in initial stages of this MoU

- i) SIEL will support in running a course on Internet of Things, or any other similar course at Pravartak, under supervision of the academic coordinator. This course will be conducted jointly by Pravartak (IIT-M) faculty and SIEL engineers in consultation/concurrence of the academic coordinator/IIT- Madras faculty as per Pravartak advice. This shall also include Mini/Major student projects, or non-graded design units for Pravartak (IIT-M) students.
- ii) SIEL may provide 1-year M.Tech (Thesis) project for Pravartak (IIT-M) students who will utilize research facility of Innovation Lab at Pravartak for 6 months and may utilize research facility of SIEL at SRI-Delhi for next 6 months under supervision of the academic coordinator. During their tenure in SRI-Delhi, Pravartak students will abide by confidentialities & IPR related requirements of SRI-Delhi, apart from other general requirements, which shall be shared with Pravartak in advance.
- iii) SIEL or Pravartak to provide summer course, workshops and trainings etc. to the students of IIT-M, after approval and notification from Pravartak and confirmed by the course coordinator.
- iv) SIEL may generate technology-forecasting reports from the students engaged in Innovation Lab.
- v) A list of equipment is provided in Annexure-A of this MOU. Both Parties agree that on a written demand by SIEL and only after Pravartak would have actually received physical possession of the equipment as mentioned in Annexure-A, would it confirm in writing that the equipment have been received by them and are being used as per terms of this MOU.
- vi) The equipment/laboratory could be utilized by Pravartak (IIT-M) UG/PG students for their projects based on SIEL problem statements/challenges (endorsed /accepted by academic coordinator) or practical assignments given by Pravartak faculty to students of IIT-M.
- vii) SIEL to provide, install equipment at the designated lab space for the laboratory course identified at IIT-M.
- viii) SIEL will replace/upgrade lab equipment as per Samsung standards, during the tenure of his MOU.

MEMORANDUM OF UNDERSTANDING

This Memorandum of Understanding (MOU), hereinafter referred to as the Memorandum, entered into on _____,

by and between

Rashtriya Raksha University (hereinafter RRU), is a statutory University established by the Government of India under the Rashtriya Raksha University Act, 2020. The University is accorded the status of an Institution of National importance under the Ministry of Home Affairs, Government of India. RRU aims to provide comprehensive education, research, training and extension in all aspects of Internal and National Security to in-service and retired personnel from military and para-military forces, security and intelligence agencies, police establishments and civilian student community. RRU has a vision to emerge as a Premier Centre of Knowledge, for international and national stakeholders seeking Peaceful, Prosperous and Stable World Order. RRU is being represented by its authorised Signatory the Vice-Chancellor, RRU, hereinafter referred to as the "First Party",

And

IITM-Pravartak Technologies Foundation, a company limited by Guarantee, Registered under the Companies Act, 2013 with CIN U73100TN2020NPL135863 having office at E1-07, 1st Floor, Block E, Kanagam Road, IIT Madras Research Park, Taramani, Chennai, Tamilnadu 600113 represented by Prof. Ravindra Gettu (hereinafter called 'IITM-Pravartak'), which expression shall, unless repugnant to the context or meaning thereof, be deemed to mean and include its successors-in-interest, designates and permitted assigns, of the Second Part,

"RRU" and "IITM-Pravartak" are individually referred as "Party" and collectively referred as "Parties".

RECITALS:

WHEREAS, RRU aims to provide comprehensive education, research, training and extension in all aspects of Internal and National Security to in-service and retired personnel from police establishments, military and para-military forces, security and intelligence agencies, and civilian student community amongst others and IITM-Pravartak is established to promote research and development.

AND WHEREAS, RRU is interested in working with IITM-Pravartak on various activities as follows:

- Collaboration and extension with other institutions and ensuring public and private partnership.

- Jointly applying for grants and contributions for the projects related to cyber security from governments, industries and other bodies.
- Creation of knowledge and expertise to face new and emerging security challenges to produce cost- effective, tailor made indigenous security solutions in information security products and services.
- To encourage research in the field of Cyber Security, Cyber Defense and Internet Engineering and Governance.
- To promote innovation, design facilitate and development of algorithms and develop the indigenous software tools for cyber security and internet standards under the 'Make in India' initiative of Government of India.
- Conducting annual security symposium, seminar, roundtable conference etc. in the field of Cyber security.
- Internship, Specialized Training & placements.
- To undertake collaborative R&D in developing the human capital and technical skills needed to solve complex problems of cyber security and also to conduct research that enhances the technical, legal, and policy aspects of cyber security leading to commercially viable products.
- Developing/Conducting training courses and necessary certification for CISO, IT professionals, scientists, engineers of SITAICS in relevant fields/disciplines in cyber security.

AND WHEREAS, the Parties are desirous of entering into this MOU to set out the terms and conditions on which they shall cooperate and work together and the Parties wish to record their respective obligations in this regard.

RESPONSIBILITIES AND OBLIGATIONS OF THE PARTIES

It is the desire and the wish of the aforementioned Parties to this MOU that this document should not and thus shall not establish nor create in any form or manner of a formal or indenture, but rather an MoU between the Parties to work together in such a manner that would promote a genuine atmosphere of collaboration and alliance in the support of an effective and efficient partnership.

NOW IT IS HEREBY MUTUALLY AGREED AS FOLLOWS:

1. Scope of the MoU:

1.1 The Parties will work together on various projects relating to education, research, hardware and software development and such other areas as mutually agreed from time to time. The various specific projects agreed upon by the parties will be discussed and documented between the Parties from time to time and the details of the same will be documented in an addendum detailing points of clause 1.6.

1.2 Each of the Projects would be run/ conducted as per the terms of this MoU and any modifications to this MoU as are mutually agreed and documented as an addendum to this MoU.

1.3 Each of the Parties shall designate Nodal officer who shall be the single point of contact for all matters relating to this MOU and the specific projects.

1.4 Neither party is entitled to make any representations, warranties or commitments on behalf of the other party to any third party except to the extent authorised in writing by the other party.

1.5 Parties shall obtain mutual written consent for adding any other party to any joint project.

1.6 Parties shall agree on and document in the Addendum of this document project details including but not limited to:

- a) Project definition
- b) Goals
- c) Deliverables
- d) Members
- e) Hardware, software and other tools used for the project
- f) Governance
- g) Execution plan
- h) Funding
- i) Roles and Responsibilities of Parties

2. Obligations of Parties:

For successful implementation and execution of each of the Projects therein under this MoU, Parties shall provide the following:

2.1 Technical advice from time to time through personnel designated on a project to project basis.

2.2 Hardware support like servers on loan basis including its maintenance on terms and conditions as may be mutually agreed between the parties in writing.

2.3 Specific software tools (if any) as agreed on a project to project basis.

2.4 Periodic review of the project and suggesting corrective action/ improvements as appropriate.

2.5 For each of the projects, Parties shall share the names of the persons associated with the project and financial agreements, if any.

2.6 Parties agree that they shall not at any time use or disclose to any person directly, or indirectly, any confidential or proprietary information, intellectual property (including trade secrets) and confidential facts relating to the business and affairs of Parties and that every person from Parties associated with the project shall be bound by the confidentiality

obligations. Parties shall obtain appropriate agreement from the members of the projects to ensure adherence to the confidentiality obligations.

2.7 Parties agree that any publication including but not limited to news article, advertisement, announcement or publicity pertaining to this MoU or its content shall be prepared in mutual consultation and released only based on prior approval of the parties.

2.8 Parties shall, not directly or indirectly, act or omit to act or carry out any activities that would cause harm or damage the name, credibility, brand or reputation of parties or which would be detrimental to the business or interest of parties jointly or severely.

3. Intellectual Property:

3.1 Parties agree that all Intellectual Property in whatever form, developed in the course of the projects belongs to both Parties jointly. Parties shall agree at the beginning of the project how items such as presentations, source code and intellectual property developed during the project is governed.

- a) Parties may agree to open source the specified modules of the project.
- b) Parties may agree to keep the presentations, source code and intellectual property confidential for the exclusive use and commercialization by Parties for the period of 1 year for the specified modules of the project.
- c) Parties may agree to assign to each other and its nominees, with or without additional compensation, all rights in such Intellectual Property.

3.2 Parties agree that they honour and abide by the licensing and conditions set forth by the hardware and software components from third parties used in the projects.

4. TERM AND TERMINATION

4.1 This MoU shall be effective from the day of signing for a duration of 2 years and valid for a period of 2 years extendable for the period as may be determined by the parties mutually in the interest of both parties and shall automatically be renewed in cycles of 2 years each, unless otherwise terminated by either of the parties.-

4.2 Either Party can terminate this MOU at will by giving 15 (fifteen) days prior written notice to the other Party.

At the event of termination of this MoU, the course of action for any ongoing project (s) shall be determined mutually by the parties. In case the parties fails to reach mutual agreement on ongoing projects, the parties shall complete the project (s) as per agreed parameters and to that extent the MoU will subsist till the conclusion of such project.

4.3 The Parties may terminate any project in the best interest of the parties in the manner as may be determined mutually.

4.4 Without prejudice to any rights and remedies which it may have, either Party may, after giving 7 days' notice to the other Party, terminate this MoU if the other Party commits a material breach of this MoU

4.5 Termination of the MoU shall be without prejudice to any accrued rights of the Parties as of the date of the termination.

4.6 On termination of this MoU, the parties shall promptly deliver to a designated representative of the parties all originals and copies of all materials, documents which are in their possession or control. The parties will facilitate meeting of the designated representatives for review of the confidential and proprietary information known or possessed and work on a way to resolve all intellectual property related issues.

5. LIABILITY

Neither Party make any representation, condition or warranty either expressed or implied under this MOU. Neither Party shall be liable to the other party for any direct, indirect, speculative, special, economic or consequential loss or damage suffered by the other party (including but not limited to loss of profits, loss of anticipated savings or loss of an opportunity etc.).

6. FORCE MAJEURE

6.1 Neither Party shall be liable to any other Party for non-performance or defective or late performance of any obligation hereunder, to the extent and for such periods of time as such non-performance or defective or late performance is due to reasons outside the Party's reasonable control, including acts of God such as but not limited to fire, explosion, flood or other natural calamity, epidemics or from any relevant governmental action, court order or decree (hereinafter, a "Force Majeure Event").

6.2 The Party not performing fully or on time shall continue to take all actions reasonably within its power to comply as fully as possible with this MoU except where the nature of the Force Majeure event shall prevent it/him from so doing.

6.3 The Party failing to perform fully or on time shall notify the other Party in writing immediately on the occurrence of such Force Majeure event, and shall in every instance, to the extent it/ he is capable of so doing, use its/ his best efforts to remove or remedy such Force Majeure event.

Removal of difficulties:

In case of any difficulty arising out of the implementation or interpretation of this MoU and any other arrangements made under this MoU shall be removed by the Vice Chancellor, RRU and the Designated Authority of the IITM Pravartak. ~~and~~ The decision herein shall be final and binding.

7.0 ARBITRATION

7.1 Only in case the parties does not agree and determined the course of action mutually as per clause 6 of this MoU such a dispute shall be referred to the Arbitration in Chennai in accordance with the provisions of the Arbitration and Conciliation Act, 1996 or any statutory modifications or re-enactment thereof for the time being in force. The language of arbitration shall be English.

7.2 This MoU shall be subject to jurisdiction in Chennai for all purposes.

8.0 GENERAL

8.1 This MoU shall constitute the entire MoU between the Parties hereto and supersedes any and all prior MoUs whether formal, informal oral or written between the Parties hereto.

8.2 The failure of either party to exercise, or its delay in exercising any right, power, or privilege available to it hereunder shall not operate as a waiver thereof, or preclude any other, or further exercise thereof, or the exercise by the party of any other right, power or privilege hereunder.

8.3 This MoU may not be assigned by either Party without the prior written permission of the other Party.

8.4 Both Parties shall be responsible for the relevant statutory compliances as relevant to their respective organization and to the scope of work as contemplated herein.

8.5 Any notice required to be served hereunder shall be deemed to have been duly served if sent by and delivered in writing in a form enabling confirmation of delivery, either by hand, by air courier, or by facsimile transmission with a confirmation letter to the address given above (or such other address as either Party shall specify from time to time in writing).

8.6 If any provision of this MoU shall be determined to be void or unenforceable under any applicable law, such provision shall be deemed amended or deleted insofar reasonably consistent with the purposes of this MoU and to the extent necessary to conform to the applicable law and the remaining provisions of this MoU shall remain valid and enforceable in accordance with their terms.

IN WITNESS THEREOF the Parties have set their hands to this MOU on the date mentioned in the beginning. in the presence of the following Witnesses.

Rashtriya Raksha University Signature: Name : Prof. (Dr.) Bimal Patel Designation: Vice-Chancellor	IIT MADRAS PRAVARTAK TECHNOLOGIES FOUNDATION Signature: Name: Prof V Kamakoti Designation:
Witness Signature: Name: Designation:	Witness Signature: Name Designation:



IITM Pravartak Technologies Foundation

A Section 08 Company

Funded by

Department of Science and
Technology, Govt of India

Under

National Mission on
Interdisciplinary Cyber Physical
Systems

Expectations
from DST

Focus: Sensors, Networking, Actuators, Control Systems (SNACS)



Technology
Development



Entrepreneurship
Development



Human resource
Development



International
Collaboration

To be achieved through a Section 08 Company



DST Terminologies

PRAYAS

PRomotion and **A**cceleration of **Y**oung and **A**spiring
technology entrepreneur**S**

- The scope of PRAYAS is to support Idea to Prototype (by attracting a number of youth who demonstrates problem solving zeal and abilities to work on new innovation based start-ups).
- The scope also aims to address gaps in the very early stage idea/proof of concept.

https://www.nidhi-prayas.org/letters/3.NIDHI-PRAYAS%20scheme%20_DST%20Ver%203_Mar%2020.pdf

DST Terminologies

EIR

Entrepreneur In Residence

- The scope of EIR is to inspire the best talents to be entrepreneurs, minimize the risk involved in pursuing start-ups, and to partially set off their opportunity costs of high paying jobs. The
- EIR program aims to provide tremendous opportunities for innovative entrepreneurs to expand their networks and get critical feedback on their ventures in order to promote their entrepreneurial career goals and aspirations.

<https://dst.gov.in/nidhi-eir-brochure-featuring-entrepreneurs-residence-launched>

DST Terminologies

SSS

Seed Support System

- The basic idea of seed support is providing financial assistance to potential start-ups with promising ideas, innovations and technologies.

DST Terminologies

DIAL

Dedicated Innovation Accelerator

- This helps fast tracking a start-up through focused intervention (Push innovations into commercial domain).

TARGETS in 5 years (1/3)

S No	Target Area	Targets					
		1 st Yr	2 nd Yr	3 rd Yr	4 th Yr	5 th Yr	Total
Technology Development							
(a)	No. of Technologies (IP, Licensing, Patents etc)	5	11	20	20	20	76
(b)	Technology Products	3	5	10	10	10	38
(c)	Publications, IPR and other Intellectual activities	25	50	75	75	91	316
(d)	Increase in CPS Research Base (#People involved)	10	40	50	75	75	250

TARGETS in 5 years (2/3)

PRAYAS	Idea to Prototype
EIR	Promoting business idea
DIAL	Fast tracking a start-up through focused intervention
SSS	Providing early stage investment

Entrepreneurship Development	Y1	Y2	Y3	Y4	Y5	Total
(a) CPS-Technology Business Incubator (TBI)	1	0	0	0	0	1
(b) CPS-Start-ups & Spin-off companies	4	6	14	14	14	52
(c) CPS-GCC - Grand Challenges and Competitions	1	1	1	1	1	5
(d) CPS-Promotion and Acceleration of Young and Aspiring technology entrepreneurs (CPS-PRAYAS)	1	0	0	0	0	1
(e) CPS-Entrepreneur In Residence (CPS-EIR)	2	3	8	10	10	33
(f) CPS-Dedicated Innovation Accelerator (CPS-DIAL)	1	-	-	-	-	1
(g) CPS-Seed Support System (CPS- SSS)	1	-	-	-	-	1
(h) Job Creation	100	1400	4000	4000	4000	13500

TARGETS in 5 Years (3/3)

International Collaboration	Y1	Y2	Y3	Y4	Y5	Total
	2	2	2	2	2	10

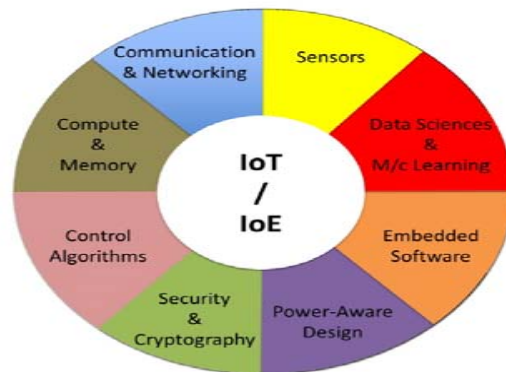
Human Resource Development	Y1	Y2	Y3	Y4	Y5	Total
(a) Graduate Fellowships	15	25	100	100	100	340
(b) Post Graduate Fellowships	5	17	20	20	0	62
(c) Doctoral Fellowships	2	15	8	0	0	25
(d) Faculty Fellowships	0	3	3	0	0	6
(e) Chair Professors	0	3	3	0	0	6
(f) Skill Development	170	190	200	220	240	1020

Self Supporting after 5 Years

**The
Approved
budget
from DST**

Budget Head	Budget in Rs. Crores					
	1Y	2Y	3Y	4Y	5Y	Total
Recurring	13.25	30.00	30.00	24.75	13.00	111.00
Non-Recurring	9.00	15.00	20.00	10.00	5.00	59.00
Total	22.25	45.00	50.00	34.75	18.00	170.00

Our Proposal



- Model Industry 4.0 Factory (SW & HW) for Smart Manufacturing
- Non-Destructive Testing (NDT 4.0) Industrial IoT solutions
- Next Gen medical devices with IoT capabilities
- Next-gen Indigenous Secure Intelligent and Reliable Compute ecosystem
- Open-source scalable data analytics platform for IoT applications with AI/ML interface
- Secure, High BW and resilient wireless communication networks for IoT
- Inferential Lenseless cameras
- Collaborative Telerobotics
- Distributed Acoustic Sensing (DAS)
- Water, Gas and Energy Distribution networks for Smart City
- + Other Promising Ideas

The Administrative Journey – (1/2)

Event #	Details	Date
1	Provisional Approval from DST for TIH	March 03, 2020
2	Sending Acceptance from IITM to DST	March 05, 2020
3	Transfer of 7.25 Crores from DST to IITM	March 30, 2020
4	Completed Preparation for formation of Section 08 Company including Name approval	May 15, 2020
5	BoG Approval for formation of Section 08 Company “IITM PRAVARTAK TECHNOLOGIES FOUNDATION”	May 20, 2020
6	DPR submitted to DST	May 30, 2020
7	Company Incorporation approval from MCA	June 17, 2020
8	Hub Governing Body (HGB) and Company Board Notified	Jul 2, 2020

The Administrative Journey – (2/2)

Event #	Details	Date
9	First HGB and Board Meeting	Jul 9, 2020
10	Approval of budget of 170 cr. from DST with request to revise DPR	Aug 4, 2020
11	Revised DPR submitted to DST	Aug 17, 2020
12	Tripartite (IITM-DST-IITM PRAVARTAK) Agreement approval of Law ministry, Govt of India with revised year wise budget	Nov 09, 2020
13	Signing of the same by IITM and IITM Pravartak	Nov 09, 2020
14	Second Instalment fund from DST to Pravartak – Part-1 (8 crores)	Dec 17,2020
15	Second Instalment fund from DST to Pravartak – Part 2 (7 crores)	Dec 22,2020

About IITM Pravartak

- Main Centre in IIT Madras Research Park – over a leased area of 11500 sq. ft., to be taken on a 20-year lease.
- The Board of the Company
 - The Director, IITM – Chairman
 - The Dean, ICSR
 - Prof. David Koilpillai, EE
 - Prof. H.S.N. Murthy, ASE
 - Shri. Bhaskar Bhat, Ex-MD Titan Group, Director TATA Sons and DAA of IIT Madras
 - Dr. G. Venkatesh, CTO Sasken and DAA of IIT Madras
 - Dr. Kumar Sivarajan, CTO Tejas Networks and DAA of IIT Madras
 - Prof. Devendra Jalihal – Principal Investigator
- The HGB includes The Mission Director, NMICPS, DST in addition to all the members of the board.
- Prof. V. Kamakoti is the Faculty In-charge

Basic SoP for all Interactions

- All proposals/MoUs will be Approved by the Technology Committee of the IITM Pravartak Board
- Approval of a project based on Technical Strength, Novelty and alignment with Targets set by DST including
 1. Patents
 2. Startups/Technology Spin offs
 3. Publications
 4. Number of UG, PG, PhD
 5. Skill/Job Creation

Modes of Interaction PRAYAS

PRAYAS	Idea to Prototype
EIR	Promoting business Prototype
DIAL	Fast tracking a start-up through focused intervention
SSS	Providing early stage investment

Technology funding (PRAYAS)

- For IITM Faculty
- An Innovation vetted by HAI visit to ICSR
- Deliverables: File Patent + Proof of concept + Publication + UG/PG/PhD involvement
- Remarks: Separate fellowship for UG (6K) /PG/PhD (As per MHRD norms), they can be staff of project in which case higher pay.

Criteria

1. Patents
2. Startups/Technology Spin offs
3. Publications
4. Number of UG, PG, PhD
5. Skill/Job Creation

PRAYAS SoP

- Technology Funding Commitment through Agreement/Project proposal
- Maximum of 50 lakhs in two stages - 20 Lakhs till filing of patent/licensable technology and additional funding of 30 lakhs beyond that in this phase.
- Upfront agreement on quarterly milestones - Exit clause, if milestone not met
- Equipment purchased (not included in the funding) will be owned by Pravartak and hosted at Research Park or Common Equipment Facility at IIT Madras – Cost on usage basis will be accounted in monthly financial flow.
 - Equipment purchased will not be highly specialized and subject to cost-benefit analysis
- 5% overhead will be accounted as part of the expenses

Patents & Licensing

PRAYAS Members

- All Patents and Technology Ideas will be owned by IIT Madras with faculty and others as inventor and exclusively Licensed to Pravartak at zero cost with royalty sharing agreement between IITM + IITM Pravartak.
- Indian patent filing will be done by ICSR, expedition cost borne by Pravartak
- Decision on PCT + National Filing by ICSR and the proportional cost met by Pravartak
- IITM through IITM Pravartak will license the IP/technology subsequently to startups whenever they are formed with royalty clause. Exclusive License option will be made available to startup subject to meeting the Terms and Conditions of IIT Madras as decided at the time of filing of patents.

Modes of Interaction EIR + SSS

PRAYAS	Idea to Prototype
EIR	Promoting business Prototype
DIAL	Fast tracking a start-up through focused intervention
SSS	Providing early stage investment

Startup funding (EIR + SSS)

- **Launch Preconditions**
 - Must have filed patents or Licensed technology at start
 - Register a startup at the beginning of this mode
 - Involvement (as a Director or a Mentor) of IITM Faculty must

Criteria

1. Patents
2. Startups/Technology Spin offs
3. Publications
4. Number of UG, PG, PhD
5. Skill/Job Creation

EIR + SSS SoP

- TECHNOLOGY FUNDING may be obtained from either Pravartak or external sources
- Startup Funding Commitment through Agreement/Project proposal, Maximum of 50 Lakhs.
- Upfront agreement on quarterly milestones - Exit clause, if milestone not met
- Upfront agreement on Monthly financial flow – funds will be transferred on monthly basis from Pravartak to Startup.
 - Transferred fund will be treated as a grant
- Equipment purchased (not included in the funding) will be owned by Pravartak and hosted at Research Park or Common Equipment Facility at IIT Madras – Cost on usage basis will be accounted in monthly financial flow.
- 5% overhead will be accounted as part of the expenses

TECHNOLOGY + STARTUP Mode

(Equity to be held by Pravartak)

Funding in P1/P2 ->	Up to 10L	20L	30L	40L	50L
Upto 20L	2%	3%	4%	6%	7%
30L	3%	4%	5%	6%	8%
40L	4%	4%	5%	7%	8%
50L	4%	5%	6%	7%	8%

Row: Technology Funding; Column: Startup Funding

TECHNOLOGY Mode

Only Phase 2
(Equity to be held by Pravartak)

Funding in P2 ->	Upto 10L	20L	30L	40L	50L
	1%	2%	3%	4%	5%

Column: Phase 2 Funding

Modes of Interaction CO-FUND

PRAYAS	Idea to Prototype
EIR	Promoting business Prototype
DIAL	Fast tracking a start-up through focused intervention
SSS	Providing early stage investment

DIAL Mode (Technology Development) (DIAL)

- 2:1 – Pravartak : external funding
- Precondition: Project with a company (could also be a startup)
- Deliverable: File patent and/or Tech Transfer/Licensing
- External Funding must be deposited and operated by Pravartak.
- Involvement of IITM Faculty must

Criteria

1. Patents
2. Startups/Technology Spin offs
3. Publications
4. Number of UG, PG, PhD
5. Skill/Job Creation

CO-FUNDING SoP

- 2:1 Direct mode – Funding Commitment through Agreement
- Upfront agreement on quarterly milestones - Exit clause, if milestone not met
- Upfront agreement on Monthly financial flow
- 5% overhead will be treated as part of expenses.
- Maximum funding from Pravartak is 100 lakhs
- Clear demarcation of equipment to be purchased under grant from external partner and through Pravartak funds. Agreement will decide on retaining of the equipment procured from external grant.
- At any stage, the expense from Pravartak will be upper bounded by $2 * X$, where X is the funding received from external partner at that point of time.
- On premature exit by company – already transferred money will not be returned and technology developed will be owned b Pravartak

Co-fund Patents & Licensing

- As per agreement with external funding source, the IPs + Technology ideas can be owned jointly between IIT Madras and the funding agency and licensed at zero cost to IITM Pravartak.
- As per agreement, royalty will be shared between IITM, Pravartak and external funding agency
- Startup – License fee can be substituted through equity at an mutually agreed upon evaluation

CO-FUND Mode

(Equity to be held by Pravartak)

Funding External -> Pravartak	X/2	X	$\geq 1.5X$
Upto X	1%	0.5%	0.25%

Row: Pravartak Funding; Column: External Funding; $X \leq 100$ lakhs

Startup Mode

Additional Benefits to Startup

1. Member of Pravartak Consortium – joint project submission/participation in Hub activities of relevance to business
 - Precision Agriculture Initiatives – For eg.
 - Grand Challenges
2. 4-seater space for 2 years at RP
3. Free Access to Pravartak Facilities – Lab + Compute
4. Company Name registration, incorporation and first level website creation and hosting cost for 2 years.
5. Interactions with VCs for funding
6. Interactions with Potential customers to promote technology
7. Complete financial oversight for 2 years

Other Modes

Consultancy Projects + CSR Projects + Skill Development courses

- Take up Consultancy, CSR Projects in CPS areas or launch courses for skill development
- Ministries of GoI shall fund projects of interest to them
- For IITM faculty initiated projects and courses a clearance is needed from Dean ICSR and Chairman CCE respectively.
- 10% overhead (5% for CSR) will be taken by Pravartak and remaining will be available for faculty to execute the project.

Financial Management

- For every one of the following entities a separate Income-Expenditure record will be maintained
 - Startup
 - 2:1 Technology Development with partner
 - Skill development course
 - CSR Project
 - Consultancy Project
- For **each faculty** a head similar to PCF/RMF will be maintained to which balance funds in all non startup modes as above can be transferred in full without deduction. This can be used for all expenditures permitted under PCF/RMF except distribution. This includes National/International Travel, Conference Registration, Journal extra page charges, funding your other patents, hiring manpower including funding research scholars at IITM.
- No NEGATIVE BALANCE possible

Distribution

- All faculty will open up a Retainer Consultancy project with Pravartak
- Any payment to faculty/Staff of IITM will be through the RC mode and the distribution procedure will be followed as per existing ICSR norms.

Startup formation

- Decision regarding incubating the startup will be made by the Technology Committee of IITM Pravartak
- All startups will be incubated through IITM Incubation cell. IITM Incubation cell shall charge 1% equity for the same.
- The startups will then be co-incubated by IITM Pravartak to receive the benefits for which the equities as stated in previous slides will be taken and held by IITM Pravartak.
- As per incubation policy of IITM, for the equity held by a faculty member there is a faculty share (upto 20% of the faculty share with a **maximum ceiling** of 5%) that he/she needs to give to IIT Madras and this is held by IITM incubation cell on behalf of IITM. The same will hold in this case too. The faculty share equity will be held by IITM Incubation cell.

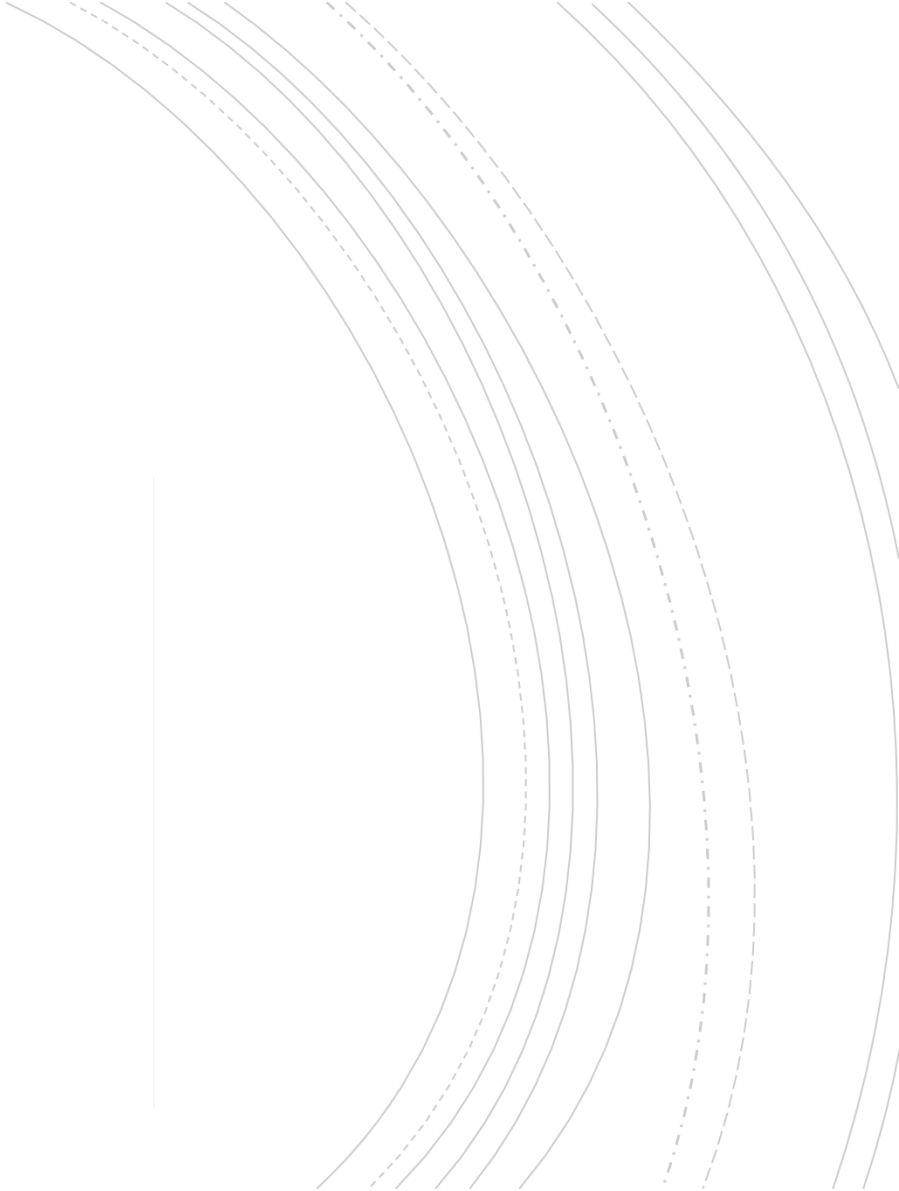
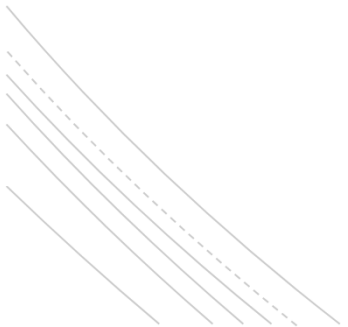
The slide features a decorative background with several thin, curved lines in light gray and blue. On the left, there is a bright blue speech bubble-like shape containing the text 'Progress So Far'. To its right is a large, dark gray rounded rectangle containing a bulleted list of achievements.

Progress So Far

- Launch of Website – Pravartak.org.in
- Indo-Canadian MoU on Precision Agriculture
 - IITM Pravartak, Asia Pacific Foundation and Digital Supercluster
- Launch of a 50 week certificate course on Large Scale Data Driven System Design



Questions and Answers





PROFILE

An Innovator, Futurist, TEDx Speaker

Nikhil Malhotra is chief innovation officer and creator of Maker's Lab, a unique Thin-q-bator space within Tech Mahindra with 20+ years of experience. Nikhil has been a researcher all his life and is now leading the growth of AI, machine learning, robotics and quantum research within Tech Mahindra. The current bets he has undertaken is how quantum physics and computing can give us better cancer drugs. ,

One of his other vision is to enable machines to talk in local Indian dialect. There are 1645 dialects in India and 26 mother tongues and 80% of Indian population does not speak English.

CONTACT

PHONE:

+91 9833543845

WEBSITE:

<http://nickmalhotra.mystrikingly.com/>

NIKHIL MALHOTRA

Chief Innovation Officer,
Tech Mahindra

EDUCATION

Royal Melbourne Institute of Technology

2000 - 2001

Masters in Distributed Computing with Distinction

SES College of Engineering, Pune University

1995 - 1999

Bachelors in Electronics Engineering with distinction

WORK EXPERIENCE

Tech Mahindra: Chief Innovation Officer

12/02/2007– Present

- Building a holistic ecosystem of innovation with the ecosystem including partners , academia and government with the R&D of the organization, Maker's Lab
- Driving on bets of the future which include AI, Quantum Computing, IOT and Extended reality
- Five areas earmarked for the future viz. space-tech, agri-tech, Health, language modeling and Quantum.
- Individual research done on protein folding techniques and linguistics from a neuroscience inspired AI perspective.
- Ecosystem is built with government agencies like NITI Aayog, Atal Incubation centers and start-ups to foster innovation

IBM Senior Architect

03/11/2005-07/02/2007

- Senior Architect for telecom based solutions.
- Acted as a Watson tester of code
- Leading the team for remediation, reconciliation and IT services

Travelport (formerly Tecnovate esolutions) Senior systems executive

9/8/2004–28/10/2005

- Leading the team on .NET for creation of insurancebookers
- PHP lead on Travelport site

EMAIL:
nikhilm@techmahindra.com

HOBBIES

Golf
Quantum Physics and Astronomy
Reading Biographies

Smart Blue Australia – Casual Contract Consultant
1/3/2003–1/05/2003

- ASP developer

PAPERS, PUBLICATIONS AND TALKS

PAPERS/PUBLICATIONS

- <https://indiaai.in/article/the-quantum-ai-qai-entanglement>
- <https://indiaai.in/article/fundamentals-of-nlp-research-in-sanskrit>
- <https://www.ibc.org/innovative-ecosystem-play/4542.article>

Videos

- TEDX: <https://www.youtube.com/watch?v=e1ROG9VUNVM>
- TEDX: https://www.youtube.com/watch?v=YW8flbHG_s_Y
- <https://www.youtube.com/watch?v=qMrfAgby4oo>
- <https://www.youtube.com/watch?v=2-qtQdQVupc>
- https://www.youtube.com/watch?v=Tj8X_lLaMc
- <https://www.youtube.com/watch?v=UBaYR14jbkE&t=83s>
- <https://www.youtube.com/watch?v=T3o-g-lf4wA>
- <https://www.youtube.com/watch?v=KggTn3TXfG&t=1s>
- <https://www.youtube.com/watch?v=qMrfAgby4oo>

INTERVIEWS on CHANNEL NEWS ASIA

- <https://www.channelnewsasia.com/news/video-on-demand/in-conversation-fy1920/nikhil-malhotra-robot-builder-researcher-12053202>
- <https://www.expresscomputer.in/cloud/nikhil-malhotra-of-tech-mahindra-says-that-data-is-new-fuel-and-ai-is-the-new-electricity/53481/>

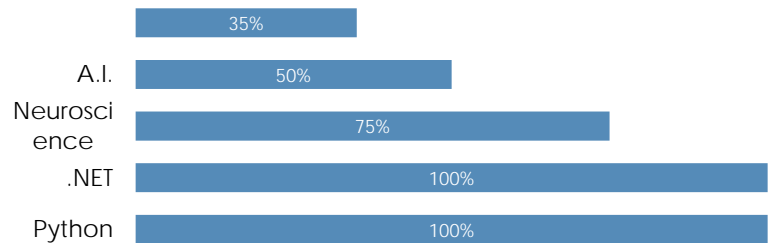
PODCAST

- <https://emerj.com/ai-podcast-interviews/services-firms-can-adapt-artificial-intelligence/>

MEDIA LINKS

- <https://economictimes.indiatimes.com/tech/software/tech-mahindra-university-of-sydney-to-develop-next-gen-technology-solutions/articleshow/68007771.cms>

SKILLS



Brief Profile: Dr. Mohit Dubey

An alumnus of **Australia India Youth Dialogue** (AIYD 2015) – a Tier-2 level think tank of young leaders (age under 40 years) from India and Australia, Dr. Mohit has an overall global experience of ~20 years. Having worked across the **triple helix of Corporate-Academia-Government**, Dr. Mohit brings the highly Professional approach with Trust and Value based Leadership. He is currently the CEO of **Atal Incubation Centre (AIC-MITADT) at MIT-ADT University, Pune**. AIC-MITADT is a section-8 *not-for-profit* company supported by **Atal Innovation Mission (AIM), NITI Aayog, Govt. of India** to promote Innovation and Entrepreneurship across India.

Dr. Mohit is a Chemical Engineering graduate from National Institute of Technology, Karnataka (NITK), Masters in Economics and PhD in “Information Technology and Economics” interdisciplinary area. His last assignment was Pro Vice Chancellor (Pro VC) at IFTM University, Moradabad (UP). He played a pivotal role of scaling the University from ~1100 students (AY 2011-12) to ~12000 students (AY 2017-18) by pioneering many initiatives. The scale was achieved at one of the *lowest marketing spend (less than INR 1cr per annum)* among the peer Universities.

During his stint as ‘Director- Corporate and International Relations’ @ IFTM University, he led all the strategic alliances of the University. Dr. Mohit represented University as part of Indian delegation to *Harvard University, University of Cincinnati (UC), USA (2016) and Oxford University, UK (2015)* under World Bank’s TEQIP programme.

He established an incubator “*IFTM Technology Lab (ITL)*” at IFTM University and completed many projects involving various government ministries/departments. He also established the *IFTM Centre of Skill Development (ICSD)* at University to launch various Skill development programmes. Few of the initiatives undertaken by ICSD were:

- 1) Established the First lab in the entire University system of the country in collaboration with Samsung under *Advanced Repair and Industrial Skills Enhancement 3 (A.R.I.S.E.3)* program to train on repairing of Refrigerators, Washing Machine, Laptop, Mobile Phone and other handheld devices
- 2) Worked very closely with CEO of *Telecom Sector Skills Council (TSSC)* to sign the MoU to create the First dedicated ‘*TSSC-COE at IFTM University*’ in the region in Hub-Spoke model
- 3) Established the First lab in the University system for *skilling ‘Manual Scavengers’ in collaboration with Central Institute of Plastics Engineering and Technology (CIPET) and National Safai Karamcharis Finance & Development Corporation (NSKFDC) an arm of Ministry of Social Justice and Empowerment, Govt. of India*

Prior to his Educational stint during his IT experience spanning over a decade with India’s second largest IT company *Infosys Ltd in Pune and Bangalore*, he moved up the value chain starting from Software Engineer to Client Solutions Manager in presales function in a very short

span. As part of Customer Relationship management at Infosys, he worked with *Bank of America in Atlanta and Los Angeles in both the Technology and Business domain for more than 7 years.*

His main interest areas include Banking and Capital Markets in which he completed the Certification in Capital and Derivatives market from *National Stock Exchange, India*. He won many awards and accolades at both Infosys and Bank of America for his 'Just Do it' fervor across assignments.

Ganapathy Venugopal

+91 98451 13954 (M) | vg@axilor.com

An accomplished leader in the areas of strategy and performance management; currently pursuing the dream of improving the odds of success of early stage entrepreneurs in India.

PROFESSIONAL EXPERIENCE

Axilor Ventures (2015 – present)

Co-founder & CEO

Axilor (www.axilor.com) is a new generation platform to support early-stage entrepreneurs. It was founded by Kris Gopalakrishnan, S D Shibulal, Prof Tarun Khanna, Srinath Batni and Ganapathy Venugopal. Through its funding programs, Axilor supports early stage entrepreneurs improve their odds of success in enterprise, deep-tech, fintech, agri-tech and healthcare.

Axilor's accelerator program was rated the No.1 program for early stage startups in India two years in a row and was recently ranked the second most active VC in India. Through its programs, Axilor has supported more than 125+ startups since its inception and has the largest startup founder community in India.

Infosys Ltd (2005 – 2014)

Last held role: Head - Strategy & Planning

Reporting to the CEO

- As Head - Strategy & Planning, responsible for strategy design, execution, performance management and operations planning for a USD 7 billion corporation with 150000+ employees; work with the CEO and the Board on strategy formulation, drive execution and ensure strategy realization. Led a high-performing corporate team of 30 professionals and 100+ professionals in the business units.
- Led an internal program on complete re-architecture of the business performance management system.
- As Head of Strategy, spearheaded key transformational programs including organizational restructuring to execute the new strategic direction.
- Scaled the corporate development function and introduced a growth-focused planning model for mature businesses and incubating new growth ideas, leading to creation of several new growth engines.
- In an earlier role, established the Corporate Performance Management function that drove strategic alignment and increased performance accountability in a high growth environment.
- Partnered with the Infosys Leadership Institute in designing and delivering several high-impact leadership development programs for the senior leadership team.

1998 - 2005

Various leadership roles in management consulting and financial services

- As a management consultant with AF Ferguson & Co., consulted with government, public and private sector clients in diverse industries advising them on financial restructuring, valuation, market entry strategies and organizational design.
- As Head of Business Planning in a private sector insurance company, established the business planning function to manage the rapidly growing retail insurance business and plan for a multi-channel, multi-product national business operation. Devised the business strategy, concluded annual business plans, instituted budgetary controls and improved profitability.
- As Head of Financial Planning in another private sector insurance company, finalized the long term financial plan for the insurance project which formed the basis for the joint venture. Set up the financial planning function and implemented a comprehensive financial management system for financial planning and control.

GLOBAL RECOGNITIONS

- Featured in the Global 20 best-in-class strategy & planning functions by Corporate Executive Board's Strategy Leadership Council (2012)
- "Force of Ideas Award for Strategic Engagement" by the Corporate Executive Board (2010)

LEADERSHIP BEYOND WORK

- Secretary, *Expert Committee under NR Narayana Murthy* to articulate the vision, organization structure and governance for NASSCOM 2020
 - Rapporteur, *Narayana Murthy Committee on "Corporate Sector Participation in Higher Education"* (Planning Commission, 2012)
 - Program Lead, '*100 MNCs program*', a joint program between leading Indian corporations and CII aimed at creating 100 Billion-dollar corporations from India (CII, 2006)
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PERSPECTIVES

- [Hope in the time of Covid](#), Blog on [www.axilor.com](#)
- [The Science of Incubation](#), Guest op-ed in Mint
- [Moving from opinions to evidence: the first 100 days of a startup](#), Guest article in Yourstory
- [Balance your founders' intuition with evidence](#) on Axilor's model for early stage startups in Yourstory
- [How Axilor is grooming the next generation of startups](#), Forbes India special feature on Axilor
- [Bengaluru – climbing the innovation ladder](#), panelist at Forbes India CEO Dialogues series
- [Building JP Nagar into a startup Hub](#) on Axilor as the new Startup Hub in Bangalore in Yourstory
- [Entrepreneurship Driven by Technological Innovation](#), panelist at Boston University MET – 50 years of innovation
- [The Future of Strategy in a Transient Advantage World](#), panelist at the Strategic Management Society (SMS) conference (2013)

EDUCATION

PGDM, Indian Institute of Management (IIM), Lucknow (1996-1998)

Bachelor's degree in Mechanical Engineering, University of Madras (1992-96)
