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TIME _____



TIH FOUNDATION FOR IOT & IOE
3rd Floor, IITB Monash Research Academy Building
IIT Bombay Campus, Mumbai 400075 Maharashtra, India
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CIN: U73200MH2020NPL344467



TIH Foundation for IoT and IoE
(CIN: U73200MH2020NPL344467)

Minutes of the First Meeting of the Hub Governing Body (HGB)

Held on
Tuesday, 2nd March, 2021

At
11:00 a.m. - 1:00p.m. (IST)

Venue
Through Webex

Present

Directors:

1. Prof. Subhasis Chaudhuri
2. Prof. Milind Atrey
3. Prof. P. P. Chakraborty
4. Dr. Mini Thomas
5. Dr. Harrick Vin
6. Dr. Lalitesh Katragadda
7. Mr. Jibak Dasgupta
8. Dr. K Murali Mohan
9. Prof. Leena Vachhani

Invitees:

1. Prof. Arnab Maity
2. Prof. Anirban Guha
3. CS Shirish Shetye – Company Law Consultant
4. Ms. Namita Lobo – Head Operations, TIH-IoT

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**Agenda Item No. 1****Chairman of the Meeting**

The HGB members were informed that pursuant to the constitution of HGB, the Director IITB would be the Chairman for the HGB meeting.

Prof. Subhasis Chaudhuri, Director of IITB, was requested to Chair the meeting.

Prof. Subhasis Chaudhuri took the Chair. The Chairman informed that the proceedings were being recorded.

Prof. Leena Vachhani made a formal introduction of Prof. P. P. Chakraborty, Dr. Mini Thomas, Dr. Harrick Vin, Dr. Lalitesh Katragadda, Mr. Jibak Dasgupta and Dr. K. Murali Mohan to all HGB members.

The Chairman welcomed all HGB members and called the meeting to order and confirmed that the HGB members had received the appropriate notice for the Meeting and the papers for the Meeting.

Agenda Item No. 2**Grant of Leave of Absence**

As all HGB Members/Invitees were present, there was no need to grant of leave of absence to anyone.

Agenda Item No. 3**Confirmation of Quorum**

The HGB members were informed that there was no explicit mandate about the quorum for HGB meeting and HGB meeting was not a committee meeting as implied under the Companies Act, 2013. Accordingly it was informed that the provisions relating to quorum for Board Meeting would not be applicable.

In order to avoid confusion for future, it was proposed that the Quorum would be one-third of the strength of HGB with at least one non-IITB member.

The HGB members considered the proposal for providing Quorum for HGB meetings and passed the following resolution.

"RESOLVED THAT the quorum for HGB meeting will be one-third of the strength of HGB with the presence of at least one non-IITB member for the meeting."

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**Agenda Item No. 4****Briefing relating to Incorporation Related Activities and current office set-up.**

Prof. Leena Vachhani made a presentation about various steps taken since receipt of mandate to form TIH-IoT from the NM-ICPS office, GOI as well as current office set-up as follows:

- She explained the National Mission of Cyber Physical Systems (NM-ICPS), a concept introduced by DST.
- The Mission objectives were to create expertise in Cyber Physical Systems, encourage translational research and develop inter-disciplinary technologies. There were 25 Technology Innovation Hubs (TIHs) set up pan India basis.
- The Mission activities were defined as Technology Development, Human Resource and Skill Development, Innovation, Entrepreneurship and Start-up Ecosystem Development and International Collaboration.
- IITB was awarded with the technical vertical on "Technologies for IoT (Internet of Things) and IoE (Internet of Everything)".
- Pursuant to the mandate received BoG of IITB approved the project and allotted an office space. Subsequently section 8 company was incorporated and tripartite agreement was executed among DST, IITB and the Company.
- Steps were taken to recruit office staff and the unutilised amount, initially received by IITB from GoI, was transferred to the bank account of the Company.
- The Company had appointed company law consultant, statutory auditor, legal advisor and CA. The Company had also appointed one technical and three office employees. The interview rounds for CEO and CTO hiring were in progress.
- As a part of governance, HGB would be Apex Body, advising on future directions, budget re-appropriation and administration. The responsibility of Board of Directors (BoD) would be detailing policy decisions and ensuring company compliances. The project would be executed through Executive Committee (EC), consisting of 9 faculty members, including Prof. Leena Vachhani. The EC would be responsible for framing policies and procedures and planning and implementation. There would be need based sub-committees to be formed. These sub-committees would be Recruitment Committee, Finance Committee, Infrastructure Committee, Online Course+Training (HRD) Committee, Projects-Industry & Internal Committee, Collaborative Projects Committee and Fellowships Committee.

The HGB members noted the input provided by Prof. Leena Vachhani.

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Agenda Item No. 5

Introduction to TIH-IoT Technology focus, activities, organisation structure, targets and roadmap

Prof. Leena Vachhani made a presentation on Introduction to TIH-IoT Technology focus, activities, organisation structure, targets and roadmap, covering the following:

- The aim of TIH-IoT would be to develop eco-system for translating technologies for IoT & IoE, to develop novel technologies for intelligent system of interconnected systems (SIS) targeting various climatic conditions. The mission statement would be to facilitate multi-disciplinary approach and to provide state-of-art experimental facility. TIH-IoT would look for developing human resources and skilled personnel and creating synergy with international experts and laboratories. It would act as bridge between industry and academia. It would also facilitate start-ups in the focused area. Dr. Mini Thomas liked the concept of satellite centres. She suggested that TIH-IoT should pull out resources from other institutions and make effective efforts. Dr. Harrick Vin enquired about the success parameters. Prof. Leena Vachhani informed that the Government had given targets which TIH-IoT was expected to achieve. TIH-IoT was looking forward for technology transfer from its activities. Prof. Subhasis Chaudhuri suggested to define some KPI. Dr. Harrick Vin suggested to define purpose properly and while doing so to keep in mind nature and climatic conditions. Prof. P. P. Chakraborty agreed with the views expressed by Dr. Harrick Vin and suggested to create IoT repository of learning resources. Dr. Murali Mohan explained that the target provided were just parameters to judge the performance and they were incorporated in project report submitted by TIH-IoT. To fulfil the same, the requirements of PSUs were an additional task for these Hubs. Monetisation of IPs etc. were some of these parameters. Prof. Subhasis Chaudhuri suggested that TIH-IoT should have fine tuning of these issues. Prof. Milind Atrey enquired whether TIH-IoT could undertake any other activity other than IoT & IoE. Dr. Murali Mohan replied in affirmative mentioning that TIH-IoT could go for any area (not limited to IoT and IoE domain) to find out solution for a problem statement provided to it.
- System of Interconnected Systems – SIS. TIH-IoT would work for secured and standardised IoT for operations, maintenance and analysis. It would provide technology solutions for IoT device deployment/placement, protocols for data collection/processing storage/exchange of control commands, networking systems, IoT device-level and system-level optimisation and testing and validation methods. The technology would be helpful to various sectors including agriculture, aeronautics, shipping, railways etc.
- The monitoring, operation and analysis of the system was explained to HGB members. The modelling, hardware-in-loop simulation (HILS), system-level optimisation, synthesis automation, human machine interface (HMI) would

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provide new testing methods. The final aim was to provide effective solutions for fault detection, fault tolerant system and develop model predictive techniques.

- The technology development and its uses in various fields were explained to the HGB members.
- The road map for achieving the ultimate aim was explained to the HGB members. It was explained that the proposed technology development would benefit industry and the society equally.
- The proposed organisation structure was explained to the HGB members. It was proposed to have six technical teams directly working with the Chief Technical Officer. These teams would work on sensors, electronic system design, communication and security, AI & ML, control & estimation and integration & assembly. The CEO and his team would be responsible for administration, marketing operations and compliances.
- The TIH-IoT activities would be centralised mainly around secured and standardised IoT for operation, maintenance and analysis. The ultimate aim would be achieved through knowledge generation, industry interactions, commercialisation, human resource development and national/international collaboration.
- TIH-IoT would be link with CDAC-Kolkata, spoke(s), and other TIHs. The aim would be achieved through other satellite centres also.
- Different years' targets were placed before HGB members. Dr. Lalitesh Katragadda suggested to have organisational structure for Centre for Fusion, where large number of sensors were required. According to him, TIH-IoT might play important role of bridging the expectations of the industries. He further enquired about percentage of IoT in ecosystem which would be designed. Prof. Subhasis Chaudhuri suggested to conduct internal workshop on use of sensors wherein sensor fusion would be worked on. Dr. Lalitesh Katragadda further mentioned about development of Fab for shipping industry. He also mentioned that IITB had proper technology, which the industry was not aware of. Dr. Murali Mohan mentioned that PSUs have some facilities for Fab development and TIH-IoT would try to rope with private sector companies in this regard. He also emphasised for recognition of TIH-IoT for attracting funds under CSR for lab development. He further mentioned about obtaining permission under section 80G of Income-tax Act, for which IIT Madras had already taken initiative. Prof. P. P. Chakraborty suggested for standardisation of technology and developing strong platform for IoT technology. He suggested to involve people from lower class in development, ensuring grass root involvement. He also kindly agreed to make a short presentation on this point to TIH-IoT. Dr. Harrick Vin mentioned about system of interconnected systems and focus on security and production area. Prof. Leena Vachhani referred to technology demonstration. Mr. Jibak Dasgupta suggested to consider about marketing aspect also. He referred to MSME sector, who was having technology and knowledge.


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office: mti@tiht.ac.in | www.tiht.ac.in
City: IIT320UMH2020NPL244467**Agenda Item No. 6****Briefing about Technology Demonstration Projects and Activities identified for first year –**

Prof. Leena Vachhani made a presentation about Technology Demonstration Projects and Activities identified for first year and their impact as follow:

- Certified course => Lab Modules (online and offline) => Trainers and Start-ups (creating jobs) and generating IoT expertise.
- IoT repository => Current status of IoT devices => New research opportunity. This activity was already initiated.
- Basic Technology Demos => Attract more use-cases from industries.
- Industry internships => Establishing connection with Industry. Scholarship programs were being worked out.
- Innovation workshops => Identify new problems relevant to industries and upcoming future technologies.
- Challenges and competitions => Involving students at early stages in industrial problems; collaboration of working professionals and faculty on frontier areas.

The status of various activities was provided to HGB members, which was as follows:

- Certified courses – TIH-IoT was in talks with NVIDIA, Accenture and Siemens.
- National Trust Centre for IoT Repository – Collaborating with DoT. The proposal was submitted and screened by NSCS.
- Core technology demonstrations – First year projects to be executed at TIH-IoT were identified. Collaborative projects with CDAC-Kolkata were finalised. TIH-IoT was in talks with BHEL and IITDh.
- Entrepreneurship related activities – Interaction model was being designed in consultation with SINE.
- Fellowships – Innovative proposals were being called for.

HGB members were further informed that TIH-IoT was in process of finalising relevant MoUs with commercialisation channel partners, which were being worked out.

Dr. Murali Mohan mentioned that the fellowships/sponsorships should be at national level. Regarding Technology Development Projects, TIH-IoT should properly identify the projects based on open call for proposals. Further, on an enquiry by Prof. Leena Vachhani that if identified projects can be based on requirements, Dr. Murali Mohan gave an affirmative answer that identification of the projects could be based on requirements as well. Prof. Leena Vachhani mentioned that fellowships were being worked out as per IITB guidelines. She further enquired whether TIH-IoT could follow IITB set-up in this regard. Dr. Murali Mohan replied in affirmative and further mentioned that TIH-IoT was expected to go on larger scale. Prof. Subhasis Chaudhuri

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suggested to submit proposal to Board for approval. Mr. Jibak Dasgupta mentioned that these activities should be aligned with the targets.

Dr. Murali Mohan encouraged to take up the projects from the funding agencies as well as to give the projects to other organizations and to engage the faculty members of IITB through consultancy mode.

Agenda Item No. 7

Briefing about current IITB interactions –technical projects, fellowship procedures, infrastructure support, etc.

Indian Institute of Technology Bombay (IITB) is the host institution for TIH-IoT. Prof. Leena Vachhani briefed the HGB members about the current modes of IITB interactions. As a host institution, necessary infrastructural support was being received from IITB. The agreement for usage of space would be signed shortly. Prof. Leena Vachhani also briefed the HGB members about the proposed technical projects, fellowship procedures, etc. She also explained the strategy for awarding fellowship and enquired whether TIH-IoT could top-up the fellowship with industry contribution. Dr. Murali Mohan confirmed that such top-up was possible.

The HGB members took note of the guidelines for awarding fellowship etc.

Agenda Item No. 8

Approval of First Year Expenditure Plan

Prof. Arnab Maity made a presentation about the Total Expenditure for Five Years and thereafter explained the First Year Expenditure Plan. Dr. Murali Mohan clarified that from initial release of funds to IITB, after incurring initial expenses, the balance amount was to be transferred to section 8 company i.e. TIH-IoT. Subsequent funds would be released to section 8 company. If any interest is earned on the funds received by IITB, the same should be transferred to section 8 company. Micro level decisions would be taken by the Board of Directors and only fund utilisation figures should be placed before HGB. Prof. Arnab Maity enquired whether TIH-IoT could give additional benefits as fellowship to attract better talent. Dr. Murali Mohan mentioned that funds provided by DST should be utilised as per prescribed standards. However, the private funds could be utilised to give additional benefits.


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**Agenda Item No. 9****Approval of Purchase Guidelines**

Prof. Anirban Guha initiated explaining Purchase Guidelines for TIH-IoT and set up of Advisory Committee and Purchase/Procurement Committee. Dr. Murali Mohan mentioned that such document should be placed before the Board of Directors and the same should be informed to HGB.

Agenda Item No. 10**Approval of the Recruitment Guidelines**

Prof. Leena Vachhani mentioned about the Recruitment Guidelines for TIH-IoT, status of appointments, updates on CEO and CTO shortlists and plan on further recruitment. Dr. Murali Mohan mentioned that these documents should be placed before the Board of Director for its approval.

Agenda Item No. 11**To decide on dates for future HGB Meetings**

The HGB members were informed that pursuant to mandate received from GOI, HGB members are expected to meet at least twice a year. Dr. Murali Mohan suggested that initially HGB should meet at least once in three months. Accordingly it was decided to meet in the month of May, 2021 at a convenient date for all members.

Agenda Item No. 12**Any other business with the permission of the Chair**

Dr. Murali Mohan explained the government policy on setting up of section 8 companies within IITs. He mentioned that afterwards all section 8 companies would be brought under one umbrella. He further mentioned that IP policy was required to be properly defined, enabling sharing of benefits with faculty members. It is proposed to have profit sharing platform. Prof. Milind Atrey pointed out that it was not possible under present set up. Dr. Murali Mohan responded that the solution could be found out with set up outside campus. After evaluation of all Hubs, four Hubs would be elevated to next level and additional funds would be provided to such elevated Hubs.

The meeting was concluded at 1.10 p.m. with a vote of thanks to the Chair and all participants.

CHAIRMAN

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