

TIH Foundation for IoT and IoE

(CIN: U73200MH2020NPL344467)

Minutes of Third Meeting of the Hub Governing Body

Held on

Wednesday, 13th April 2022

At

14:30 hrs to 16:00 hrs (IST)

Venue

Hybrid mode

Present

Directors:

1. Prof. Subhasis Chaudhuri (Leave of absence)
2. Prof. Milind Atrey (In Chair)
3. Prof. P. P. Chakraborty (Leave of absence)
4. Dr. Mini Thomas (Leave of absence)
5. Dr. Harrick Vin
6. Dr. Lalitesh Katragadda (Leave of absence)
7. Mr. Jibak Dasgupta
8. Prof. Leena Vachhani

Member Secretary

1. Mr. Ratanesh Srivastava

Special Invitee

- 1. Dr. Ekta Kapoor – Head, Frontier & Futuristic Technologies (FFT)
Division and National GLP Compliance Monitoring Authority
(NGCMA), DST**

Invitees:

- 1. Prof. KVK Rao, DD FEA & Director, TIH-IoT**
- 2. Mr. J. B. V. Reddy - DST**
- 3. CS Shirish Shetye – Company Law Consultant**
- 4. Dr. Sachin Paramane – CTO, TIH-IoT**
- 5. Prof. Dipti Gupta, Executive Committee member**
- 6. Prof. Maryam Shojaei, Executive Committee member**
- 7. Prof. Gaurav Kasbekar, Executive Committee member**
- 8. Prof. Anirban Guha, Executive Committee member**
- 9. Prof. Arpita Sinha, Executive Committee member**
- 10. Dr. Padma Satish, Advisor, R&D Partnerships, TIH-IoT**
- 11. Ms. Namita Lobo – Head Operations, TIH-IoT**
- 12. Dr. Aseem Borkar – Engineering Manager**

Agenda Item No. 1: Chairman of the Meeting

The HGB members were informed that pursuant to the constitution of HGB, the Director IITB, who would be the Chairman, had informed that due to his preoccupation, he would not be available to attend the meeting and had delegated the authority to the Dean (R & D), Prof. Atrey, who would be the Chairman for this HGB meeting. Accordingly, Prof. Milind Atrey, Dean (R & D), IIT Bombay was requested to Chair the meeting.

Prof. Milind Atrey took the Chair. The Chairman informed that the proceedings were being recorded and further requested all members to identify themselves and mention the place from where they were attending the meeting. The Chairman 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

Leave of absence was granted to Prof. Subhasis Chaudhuri, Dr. Mini Thomas, Prof. P. P. Chakraborty and Dr. Lalitesh Katragadda, who could not attend the meeting and have informed the TIH-IoT accordingly.

Agenda Item No. 3: Confirmation of Quorum

The HGB members were informed that there was no explicit mandate about the quorum for HGB meeting. This was not a committee meeting as implied under the Companies Act, 2013. Accordingly, the provisions relating to quorum for Board Meeting would not be applicable. It was decided in First HGB meeting that the Quorum would be one-third of the strength of HGB with at least one non-IITB member.

The Chairman confirmed the presence of quorum for the meeting and called the meeting to order.

Agenda Item No. 4: Confirmation of the Minutes of Second HGB Meeting.

The HGB members were informed that the minutes of the second HGB meeting, which was held on May 24, 2021, were circulated among the HGB members on August 25, 2021 and also provided with the meeting papers.

The HGB members confirmed the minutes of Second HGB meeting and thereafter the Chairman signed these minutes.

Agenda Item No. 5: Introduction and welcome of Dr. Ekta Kapoor:

Mr. Ratanesh Srivastava, Member Secretary, HGB, informed the Committee that Dr. Murali Mohan had taken over another role and he would not be a part of NMICPS currently. Dr. Ekta Kapoor who was the Head Frontier and Futuristic Technologies (FFT) Division and National GLP Compliance Monitoring Authority (NGCMA, DST), would represent DST.

Dr. Ekta Kapoor thanked the HGB for extending invitation and informed about the workshop at IIT Madras, which would be held on 6th and 7th May, 2022, wherein all TIHs would make presentations.

The Chairman welcomed Dr. Ekta Kapoor to HGB and also proposed a resolution to thank Dr. Murali Mohan for his stewardship in setting up TIH and guiding TIH to overcome initial issues.

Agenda Item No. 6: Action taken report from the previous HGB meeting

Mr. Ratanesh Srivastava, Member Secretary, HGB, briefed the HGB members about the actions taken since the previous HGB meeting, as follows:

- Sharing of the concept note with HGB members - The concept note was shared separately, with the members, for their feedback.

- Developing Guidelines for Funding Technology Demonstration Projects - Process was approved by the Board of Directors and conveyed to the NM-ICPS office.

The HGB members noted the briefing.

Agenda Item No. 7: Organizational updates

Mr. Ratanesh Srivastava, Member Secretary, briefed the HGB members as follows:

a) Briefing on Objectives and Key Result Areas (KRAs) of the Organization

TIH-IoT had developed the KRAs in-line with the objectives of the organization. Objectives and KRAs, with their target values and impact analysis, were presented to HGB. The aspects, such as fostering translational research for technology and product development in IoT and building highly knowledgeable human resources in IoT, were explained. The HGB members were informed that TIH IoT was planning multiple programs at multiple levels, which would be industry-oriented. Mr. Jibak Dasgupta observed that for the fellowship projects, students would have a higher level of technical knowledge, however, they might not have the required level of domain/business knowledge. Mr. Ratanesh Srivastava, Member Secretary, explained that through these programs, TIH-IoT is trying to bridge that gap by offering students to work on industry problems under the guidance of a mentor from the same industry. Dr. Harrick Vin emphasized on the importance of both, technical and domain knowledge. The HGB members were also informed about plans for creating a vibrant start-up ecosystem for IoT and promoting international collaboration for translational research with NSF, USA. He also mentioned about making a socio-economic impact through smart education. TIH IoT would not only support start-ups but would also work on creating new start-ups. The target values of these KRAs were also mentioned. Mr. Jibak Dasgupta enquired about the logic for putting target values. Mr. Ratanesh Srivastava, Member Secretary, explained that knowing DST expectations, TIH IoT had worked backwards to arrive at the target numbers, taking into consideration the lead and lag indicators like creation of project pipeline and conversion ratio, success factor etc. Prof. K. V. K. Rao expected to mention timeline for achieving these targets. Mr. Ratanesh Srivastava, Member Secretary, informed that the target values were worked for years 1 and 2 and the years are aligned with the time of signing of the tripartite agreement and grant release to TIH-IoT. Dr. Harrick Vin mentioned that domain-centric

innovation would give better results. The Chairman suggested creating deliverables connecting to specific areas.

b) Strategic plan of activities (ongoing and future)

A presentation was made on the ongoing activities of TIH-IoT and strategic plan for future activities. The qualitative aspects of mapping of TIH IoT programs to TRLs was explained. While explaining innovation in implementation aspect of TIH IoT programs, it was mentioned that TIH IoT has already awarded 13 projects, wherein TIH IoT was focussing mainly on project definition and project design to align with the objectives of Directed and focussed research. Under CHANAKY fellowship programs, TIH IoT had invited problem statements from industries and project proposals were invited based on such industry problem statements. Students are expected to work on these identified industry problem statements. The activities dashboard, on expenditure – planned Vs committed, technology development projects and fellowships awarded, was placed before HGB members. The progress on academia-government-industry collaborations were explained to HGB members. Mr. Jibak Dasgupta suggested to connect with network institutions. The ongoing activities, covering the year 2 plan, were explained to HGB members. These activities were planned with objectives of fostering translational research for technology and product development in IoT, creating a vibrant start-up ecosystem for IoT, making a socio-economic impact, building highly knowledgeable human resources in IoT and promoting international collaboration for translational research. The high-level plan and budget, corresponding with targets given to TIH IoT were explained to HGB members.

c) Discussion on Revenue Generation:

An approach for revenue generation was presented before HGB members. It was clarified that various models explained to HGB members were initial thoughts that would be fine-tuned in the future. Dr. Harrick Vin enquired about the composition of revenue from various streams such as IP revenue etc. Mr. Ratanesh Srivastava, Member Secretary, while explaining revenue from IP and product licenses, mentioned that this would be a main source of revenue for TIH IoT. According to Mr. Jibak Dasgupta, data would be an important source of

revenue generation. Dr. Harrick Vin suggested that the portfolio of projects should be managed properly to achieve the revenue generation targets. Projects which would be highly novel and important should be given priority. TIH-IoT should also try some moonshots. There should be balanced planning and a good mixture of projects focussing on novelty and importance. Dr. Sachin Paramane explained the project categorization process based on the novelty of the idea, which TIH-IoT is presently using. Mr. Jibak Dasgupta suggested keeping IoT at the centre and taking up projects in related technologies like AI, Digital Twin etc to promote convergence.

Agenda Item No. 8: Categorization of Technology Development Programs and their impact

Dr. Sachin Paramane made a presentation on the concept notes (submitted to HGB on September 23, 2021) and ongoing Technology Development Programs and their potential impact. It was mentioned that the defined R&D focus of TIH IoT is to provide technology solutions and develop an ecosystem for commercialization based on the concepts of “reliable IoT” and “fit and forget”. TCG mapping, where technologies used for addressing challenges and gaps were explained. Core technology projects are focussed on developing innovative and distinct technologies that have a large impact through their applicability in multiple use-cases. It was informed that TIH IoT has planned to build up core and unique multidisciplinary expertise through the development of technologies for stationary and self-driven IoT devices, multimodal sensor fusion, secured and trustworthy edge computing, and smart actuator system. TIH IoT was concentrating in developing application-oriented technologies in the area of agriculture, smart education, healthcare, industrial IoT and security. In the agricultural sector, the Aerial Robotics project was considered for plant imaging and spraying of pesticides and fertilizers. General Aeronautics, the industry partner, will be supporting field trials. The agro-based projects were also aimed at preventing wastage and developing value addition. PESTLE analysis for agricultural projects was provided to HGB members. It was mentioned that initially, these projects would address the problems of onion farmers and thereafter grape and cotton growing farmers. These crops are important for the Maharashtra region. The block diagram showing the interface of different projects was explained to HGB members. Also, PESTLE analysis for smart education projects, ensuring the use of digital technologies for smart education, was provided to HGB members. Such projects would ensure the availability

of education in the remotest areas. Dr. Harrick Vin once again stressed the novelty of technology solutions and suggested to concentrate accordingly. He has explained about the Novelty and Importance matrix and this can be used to categorize the projects. He mentioned that the industry would readily adopt novel technology solutions. Mr. Jibak Dasgupta pointed out the importance of the feedback mechanism. The Chairman suggested that Transportation and Urban Mobility can be explored as a focus area. Prof. Rao could help in connecting to the large transport solution implementation agencies like MMRDA.

[Agenda Item No. 9: Discussion on IPR policy.](#)

TIH-IoT has developed a comprehensive IPR Policy, which was in the process of BoD approval. Dr. Padma Satish, Advisor, R&D Partnerships, presented the highlights of the policy to HGB members. The ownership of various types of IPs and their commercialization methodology was explained to HGB members.

[Agenda Item No. 10: To decide on dates for future HGB Meetings](#)

HGB members were informed that as decided in the First HGB meeting, the HGB meeting would be held at least once every quarter. The HGB members were requested to decide the dates for the future meetings and it was decided to hold the next meeting in the first week of October 2022

[Agenda Item No. 11: Any other business with the permission of the Chair](#)

HGB members were informed that there was no other item to be placed before the members, with the permission of the Chair.

The meeting concluded at 4.20 p.m. with vote of thanks to the Chair.

CHAIRMAN