SOP for Evaluation and Award of Technology Development Projects

TIH FOUNDATION FOR IOT & IOE
3rd Floor, IITB-Monash Research Academy Building
IIT Bombay Campus, Mumbai 400076 Maharashtra, India
office.tih@iitb.ac.in | www.tih.iitb.ac.in
CIN: U73200MH2020NPL344467

Version 1.0
14-July-2021
TIH IoT

Content

Revision History

Version	Name	Issue Date	Changes
Draft	SOP for Evaluation and Award of Technology Development Projects	8th Nov 2021	Initial version after combining the project evaluation and award processes. This will supersede the previous document titled: Guidelines for Funding Technology Demonstration Projects_v 1.0
1.0	SOP_Technology Development_Project Evaluation and Award_v1.0	13th Dec 2021	Revised version
1.1	SOP_Technology Development_Project Evaluation and Award_v1.1	15th Jan 2022	Revised version after incorporating changes suggested by Board

Document Number

	Information
Document No.	TIH/2021/PEA/01
Issue Date	08/11/2021
Document owner	TIH Foundation for IoT and IoE - IIT Bombay

Document Properties

Document Classification	Confidential
Issued to	Whomsoever it may Concern
Issued by	TIH Foundation for IoT and IoE - IIT Bombay

1 Preface

The Evaluation and Award of Technology Development Projects document of TIH Foundation for IoT and IoE, at IIT Bombay provides a framework for the project proposal award process of TIH IoT. The document provides guidelines about the types of projects, the workflow for awarding the projects, project evaluation process and method of awards and financial powers for awarding projects grants. These guidelines are framed to guide, promote, and provide favorable environment for knowledge creation and exploitation to develop new innovation and enterprises while creating public and private goods. Furthermore, the present document provides the guidelines on the consultancy charges.

2 Introduction

TIH Foundation for IoT & IoE (TIH IoT) has been set up as a Section-8 company (not-for-profit), duly incorporated under the Companies Act, 2013, having its registered office at Indian Institute of Technology Bombay, A.S Marg, Powai, Mumbai, MH 400076 IN, ("hereinafter referred to as "TIH IoT") and is an initiative of Indian Institute of Technology Bombay and Department of Science and Technology, Government of India under the National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS), being implemented by the Department of Science and Technology (DST), Government of India.

Technology Innovation Hub for IoT & IoE (TIH IoT) at IIT Bombay is focusing on creating a self-sustaining innovation continuum by fostering translational research for technology and product development, building highly knowledgeable human resources, and a vibrant start-up ecosystem, in the technology vertical of the Internet of Things (IoT) and Internet of Everything (IoE). The goal is to help India become a pioneer in technology-led economic growth and prepare the country to be the world leader in the technology arena.

3 Definition

"Projects Executed at TIH IoT" Projects executed by the employees/technical staff of TIH IoT

"Collaborators" Institutes/Organizations/Industry/Start-up/Experts working jointly on projects with TIH IoT

"Spokes/Nodal Centers" Satellite centers of TIH IoT

"Research Services" Advisory, Consulting, Project implementation/execution services

"Time Critical" Project to be delivered in a pre-defined time-frame

"Nomination" Reach-out to identified Collaborator, assign the project after proposal evaluation

"Call for Proposal" Call for proposal published on TIH IoT Website, assign the project after proposal evaluation

"Expert Council" A pool of experts in the field of IoT and IoE, created by TIH IoT by bringing together the individuals from industry, academia, government, R&D units, and start-ups, who might be interested in contributing to the knowledge development and research opportunities in the field of IoT and IoE.

"Executive Committee (ExeCom)" ExeCom is a committee constituted to frame guidelines, plan and implement activities, help in formation of the Expert Council and support interaction with industry/academia partners.

4 Technology Projects Evaluation and Award

4.1 Pipeline of Project Award

The process of Project Award will comprise of the following steps:
- Project Identification
- Proposal Call
- Proposal Evaluation
- Project Award

Figure 1: Pipeline of Project Award

4.2 Project Identification

Some of the sources for Projects for TIH IoT will be: directed research under Hub Governing Board (HGB) guidance, requirements from industry/PSUs and the inter-ministerial challenges.

In the first stage, project definition will be carried out by the TIH IoT. Project definition will include preparation of concept note and outlining the high-level scope, timelines and budget for the project. Project Approval Committee (PAC) will review the concept note and will provide initial approval to start the project award process, if appropriate. In the next stage project design will be initiated. Project will be divided in sub-projects/modules (if required), resource requirement will be assessed and budget and timelines will be further refined.
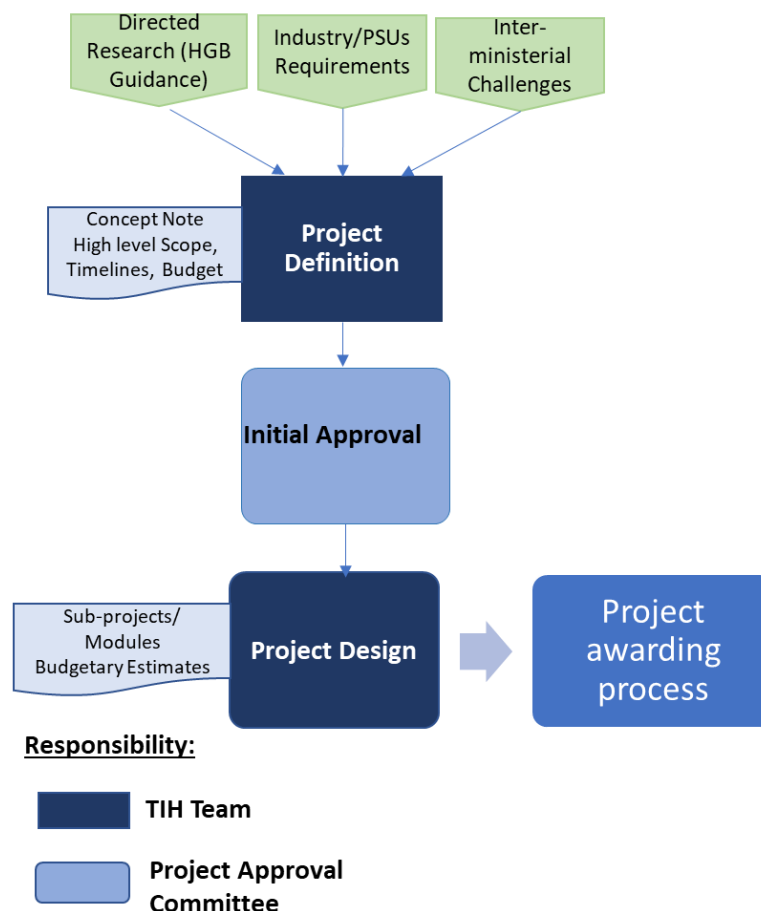

Figure 2: Project Identification

Project design stage defines subprojects and their tentative execution under the following categories: *Executed at TIH IoT* and *Executed outside TIH IoT*. Projects executed at TIH IoT will be executed by the employees/technical staff of TIH IoT. These projects are either completely done by TIH IoT staff or with the support from collaborators. These collaborators can be Institutes/Organizations/Industry/Start-up/Experts. TIH IoT can avail Research

Services in the form of Advisory, Consulting, Project implementation/execution services from the collaborators. In the second type of the project (executed outside TIH IoT), the projects will either be executed at spokes/nodal centers or by the identified collaborators. In this type of projects, the collaborators can also avail the research services from external entities.
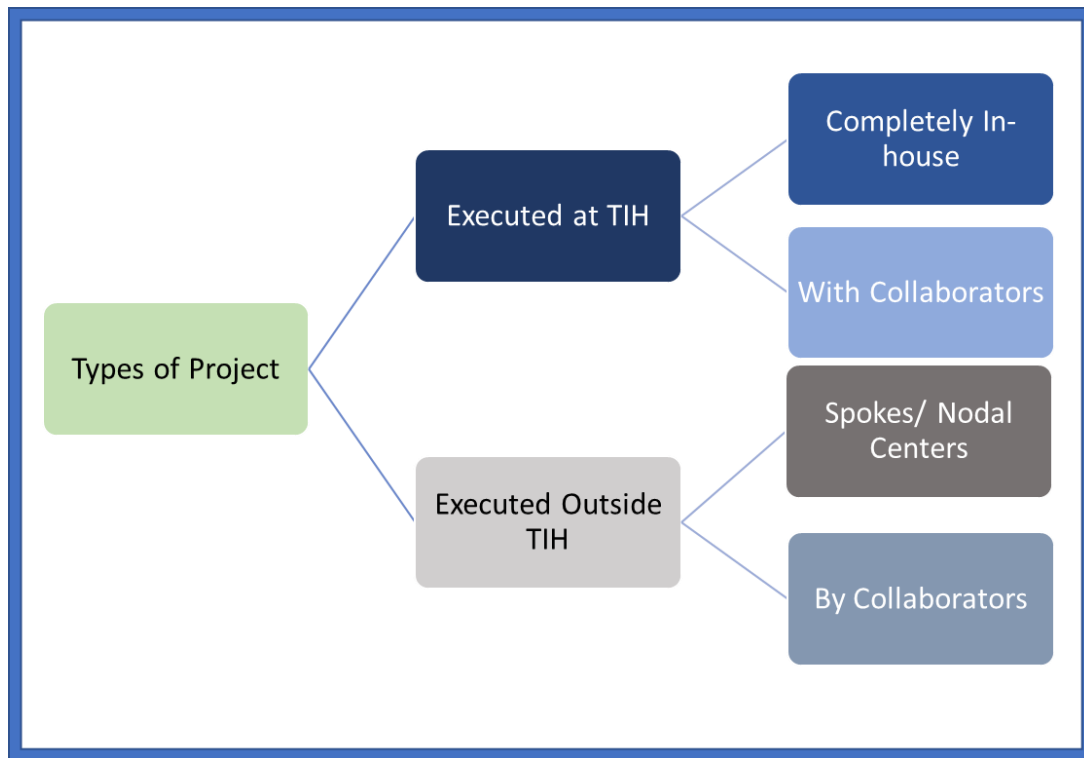

Figure 3: Project Execution Categories

4.3 Proposal Call

The proposal call work-flow process is shown in Figure 4 along with the corresponding responsible entity for different blocks of the flowchart. Once the project definition and design are completed then the project passes through different stages as shown in the flow chart. The budget limits X and Y shall be as defined in a supplementary document mentioned in sub-section 4.7. Each project will pass through the technical evaluation done by technical review committee (explained in subsection 4.4) and finally approved by the Project Approval Committee through the proposal evaluation process explained in next section.
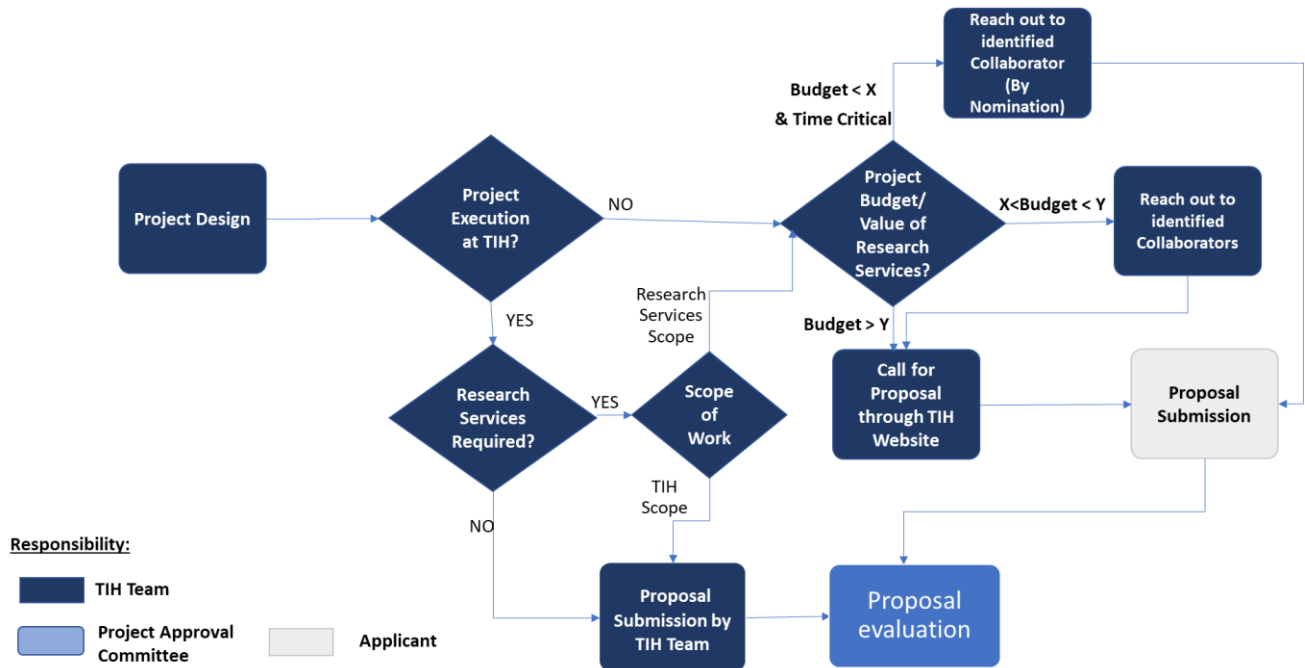
Figure 4: Project Award Work Flow

4.4 Project Evaluation Process

TIH IoT's project evaluation process is shown below in Figure 5. Once the project proposal is submitted by the applicant, it goes through the preliminary screening and eligibility check by the TIH IoT office. If the applicant is not eligible as per the eligibility criteria then he will be duly informed or if the project proposal is incomplete then applicant will be informed to complete the proposal and resubmit.

In the initial stage the project proposals are screened for:

- Technology Focus Area
- Business Opportunity
- Availability of Funds
- Timeline
- Outcome alignment with TIH IoT

Thereafter, depending upon the project proposal, a Review Committee consisting of Expert Council members will be formed. The decision on preliminary screening and review committee formation will be approved by Project Approval Committee (PAC). After the

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approval, the Executive Summary of the project proposal will be sent to three reviewers and any Conflict of Interest will be checked. If there is any conflict of interest from any reviewer then approval of new reviewer will be made by the PAC. Once no conflict of interest is found from three reviewers, the complete project proposal will be sent for review. The Review Committee will take up the technical review and provide the recommendation either to reject, revise or accept. If the proposal is recommended for revision, then the proposal will be sent for the modification and again reviewed. The review process will be completed as per the timeline suggested by PAC. The recommended proposal from the Review Committee will be sent to PAC for the final check and approval. The approved project will be then awarded with the grant as per the financial powers delegation guidelines.
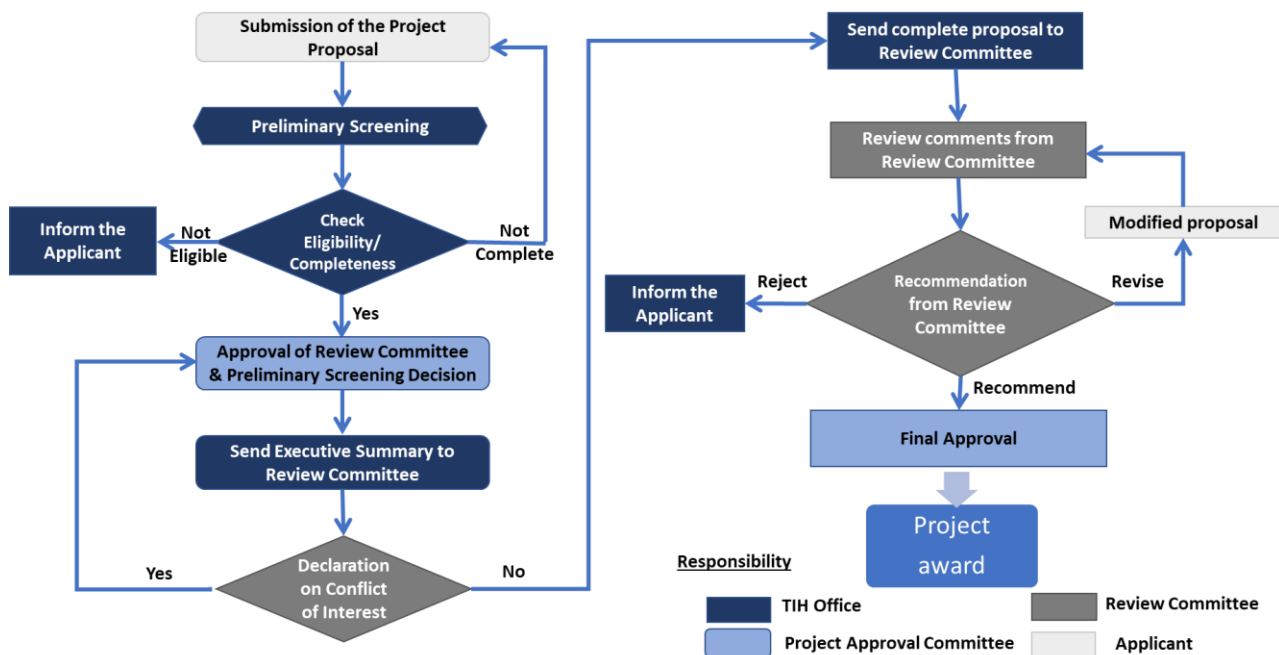

Figure 5: Project Proposal Evaluation Process

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4.5 Category of New Technology/Product

During the screening of the project proposals the category of the project proposal is also evaluated as per Table 1 below. This gives an idea about the project category and makes decision process easier.

Table 1: Category of New Technology/Product

Sr. No.	Category	Details
1	New-to-the-world Products/Technology	The alternative expression for new-to-the-world products/technology (really new products/technology) already indicates that this is what most people would define as a new product. These products are inventions that create a whole new market.
2	New-to-the-firm Products/Technology (new Product Lines)	Products that take a firm into a category new to it. The products are not new to the world, but are new to the firm
3	Additions to existing Product Lines	These are simple line extensions, designed to flesh out the product line as offered to the firm's current markets
4	Improvements and Revisions to existing Products	Current products made better.
5	Repositioning	Repositioning are products that are retargeted for a new use or application
6	Cost Reductions	Finally, cost reductions complete the six categories of new products. Cost reductions refer to new products that simply replace existing products in the line, providing the customer similar performance but at a lower cost

4.6 Review Committee

4.6.1 Composition of the Review Committee

The Review Committee (RC) will consist of 3-5 members including the Convener. The Convener is to be from TIH IoT ExeCom (preferably from the PAC). This committee constitution must have a minimum one from each group and majority from Group 2. Total number of members to be between 3 to 5:

- **Group 1:** TIH IoT ExeCom
- **Group 2:** Expert Council (may include referrals of existing Expert Council members) other than TIH IoT ExeCom

Review Committee may invite other experts.

4.6.2 Responsibility

- Review, evaluation and selection of the submitted project proposals in the relevant areas of expertise.
- Participation in mid-term review of the progress of selected projects

4.7 Project Approval Committee

The roles and responsibility as well as the composition of Project Approval Committee is provided as below.

4.7.1 Responsibility

To drive the evaluation/monitoring process and approval at preliminary and final stages of technology development projects in the assigned vertical.

4.7.2 Role

- Approval of Review Committee for proposal evaluation
- Approval of Preliminary screening decisions
- Final approval on recommended projects by Review Committee
- Oversight of Progress monitoring

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4.7.3 Composition of Project Approval Committee (PAC)

The Project Approval Committee for different technology and domain areas will have members from Executive Committee (ExeCom). The exact composition of Project Approval Committee for different technology and domain areas shall be as defined in a supplementary document. Any change in the composition of the committee needs to be ratified by the BoD.

4.8 Methods of Award and Financial Powers

The method of award of the project and financial powers for the administrative award of the projects shall be as defined in a supplementary document. Any change in the method of award and financial powers for the award of the projects needs to be ratified by the BoD.

These methods and financial powers will be exercised as per the review and approval process outlined in this SOP. After approval, there will be a final administrative sanction by COO/CEO/PiC/Chairman BoD (as the case may be) as per the supplementary document, on the recommendation based on Project Approval Committee report. The awarded projects list will be put up for information/ratification by BoD in the BoD meetings.

5 Consultancy Charges

As the experts will provide the Research Services for the executing the projects for TIH IoT, there are the limits on the time which can be spent by these members for providing research services as a consultant. Following are the broad level guidelines for the research services provided by the faculty experts (reference: IRCC, IITB guidelines for consultancy)

- The time spent on consultancy and related assignments shall be limited to the equivalent of 52 working days in a year, preferably at the rate of one working day per week. In addition, Consultants may be permitted to utilize, on an average one non-working day per week.
- Consultancy assignments may be taken up and implemented, within the constraints indicated above, provided they do not have any adverse impact on the ongoing academic, research and related activities.

Based on above guidelines and the latest salary range of Professors of IIT Bombay, the rate and limits for consultancy charges for research services provided by the experts shall be decided.

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Document No.: TIH-IoT/2021/ PEA-CPACom/01   Date: Jan 17, 2022

Composition of Project Approval Committee

With reference to the provisions contained in SOP for Evaluation and Award of Technology Development Projects, the Board of Directors (BoD) of TIH Foundation for IoT and IoE (TIH-IoT) hereby constitute the Project Approval Committee for different technology and domain areas, as under:

Domain	Technology	Members from Executive Committee (Faculty Members)	Members from TIH-IoT Team (Office bearers)
Agriculture	Electronics	Prof. Maryam Shojaei Baghini: **Chairperson** Prof. Arpita Sinha	• COO/CEO or his nominee • CTO or his nominee
Healthcare	Sensors	Prof. Dipti Gupta: **Chairperson** Prof. Maryam Shojaei Baghini	
Manufacturing (Industrial) & Others	State estimation & Control, Integration	Prof. Hemendra Arya: **Chairperson** Prof. Anirban Guha	
Security	Networking and Security	Prof. Gaurav Kasbekar: **Chairperson** Prof. Arnab Maity	
Education	AI/ML	Prof. V. Rajbabu: **Chairperson** Prof. Gaurav Kasbekar	

This is issued with the approval of the BoD.

Chief Operating Officer (COO)

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Methods of Award and Financial Powers of Award for Projects

With reference to the provisions contained in SOP for Evaluation and Award of Technology Development Projects, the Board of Directors (BoD) of TIH Foundation for IoT and IoE (TIH-IoT) hereby approve the methods of award for projects grants and delegates the financial powers of award for projects grants, as under:

Sr. No.	Type of Project	Method of Award	Financial Powers for Award
1	Executed at TIH: Completely In-house	NA	• Up to Rs.10 Lakhs: CTO & COO/CEO • Between Rs.10 Lakhs to Rs.50 Lakhs: COO/CEO & PiC • Beyond Rs.50 Lakhs: BoD
2	Executed at TIH: With Collaborators	• Up to Rs.10 Lakhs (Time Critical Projects): By Nomination • Beyond Rs.10 Lakhs: Call for Proposal	• Up to Rs.10 Lakhs: CTO & COO/CEO • Between Rs.10 Lakhs to Rs.50 Lakhs: COO/CEO & PiC • Beyond Rs.50 Lakhs: BoD
3	Executed outside TIH: Spokes/ Nodal Centers	As per BoD Guidance	BoD
4	Executed outside TIH: By Collaborators	• Up to Rs.10 Lakhs (Time Critical Projects): By Nomination • Beyond Rs.10 Lakhs: Call for Proposal	• Up to Rs.10 Lakhs: CTO & COO/CEO • Between Rs.10 Lakhs to Rs.50 Lakhs: COO/CEO & PiC • Beyond Rs.50 Lakhs: BoD

These methods and financial powers will be exercised as per the review and approval process outlined in the SOP for Evaluation and Award of Technology Development Projects

This issues with the approval of the BoD.

Chief Operating Officer (COO)

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