

## TECHFEST 2022-23 STRESS PREDICTION

### INTRODUCTION

TIH Foundation for IoT & IoE (TIH-IoT), IIT Bombay has been set up as a Section-8 company (not-for-profit) by IIT Bombay under the National Mission on Interdisciplinary Cyber-Physical Systems (NM-ICPS). It is implemented by the Department of Science and Technology (DST), Government of India.

TIH-IoT focuses on creating a self-sustained effort toward cutting-edge innovation through continuous research leading to a robust ecosystem consisting of entrepreneurship in advanced technology and innovation backed by the brightest minds in the country. The goal is to help India become a leader in technology-led economic growth.

### AIM

The aim of the competition is to provide a platform that brings innovative, modular, and cost-effective solutions to develop “IoT Technologies for Stress Prediction” for five different use cases. The present competition is focused on the **Ideation Stage** where the applications will be screened based on the presentation of their submitted Abstract. The next level of competition is a **develop stage** where the shortlisted applicants will demonstrate the proof of concept/working model they develop after three months for any one or more of the 5 use cases.

### TECHNOLOGY FOCUS

IDEATE **Stress Prediction** competition is targeted mainly to discover innovative solutions for the problems in IoT and IoE. TIH IoT wishes to invite individuals/groups/Startups/academia with innovative solutions for solving issues and challenges (particularly in the Indian context) to solve the problems in the broad domain of “**Stress Prediction.**”



## BACKGROUND

Recent scientific and technological advancements driven by the Internet of Things (IoT), Machine Learning (ML) and Artificial Intelligence (AI), distributed computing, and data communication technologies have opened up a vast range of opportunities in many scientific fields—spanning from fast, reliable and efficient data communication to large-scale cloud/edge computing and intelligent big data analytics. However, there are still technological challenges faced when it comes to “Stress Prediction”.

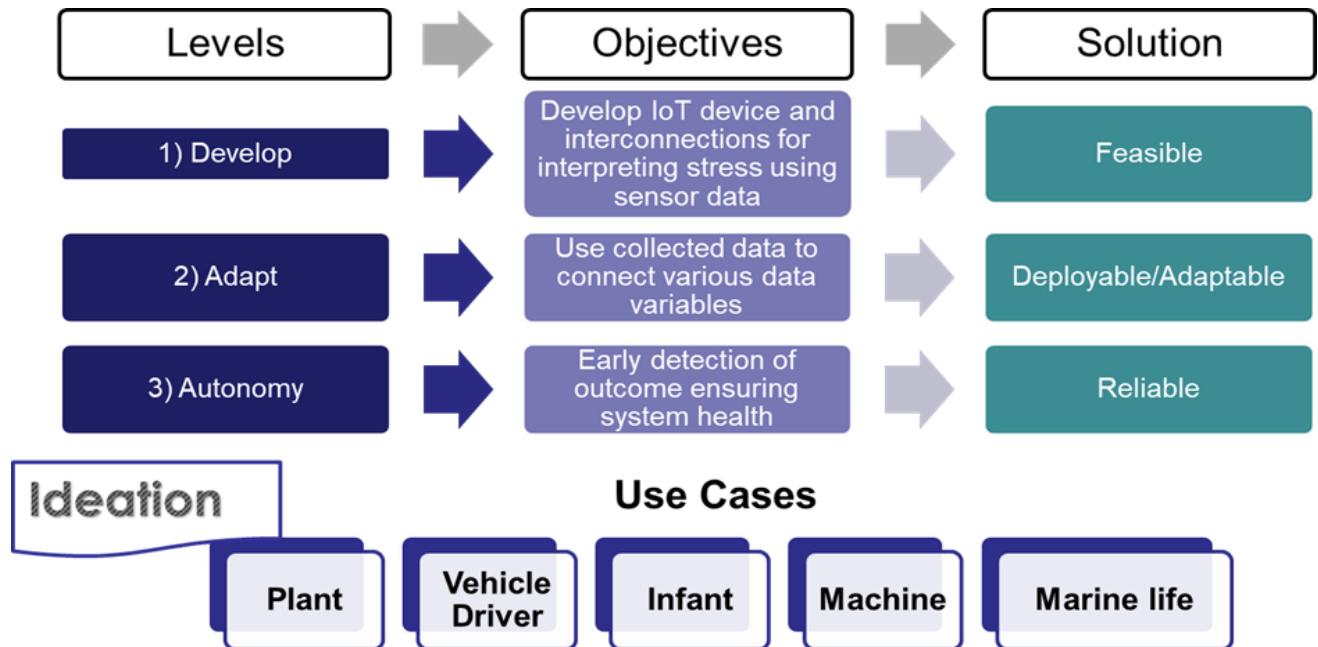
The competition brings innovative, modular, and cost-effective solutions to develop an “IoT Technologies for Stress Prediction” to be deployed at any one or more-use cases mentioned below to collect and facilitate centralized monitoring of data. The deployment should be demonstrated on any use case provided below.

The Identification of problem areas is what differentiates this competition from other hackathons or challenges conducted by educational institutions. TIH IoT has been able to determine a few real-world problem statements in the specified IoT domain, which, if resolved, would greatly benefit a large population.

## PROBLEM STATEMENT

The problem statement is the “**Stress Prediction**” which is to **develop IoT devices and interconnections for interpreting stress using sensor data**. The ideation of the problem statement can be applied to any one or more of the **5** use cases which are **plant, vehicle driver, infant, machine, and marine life** as shown in the figure 1 below.

Figure 1: The stress prediction problem



The device should have sensor-based identification and development, the system should possess the sensor networking solution, the control can be a user/manual control and the stress indicator can be after the appearance of symptoms (direct observation of outputs)

## ELIGIBILITY

- Individuals or teams from the following categories are allowed:
  - Students/research scholars of authorized schools/institutions (students must submit their Valid School/College ID)
  - Early-stage Startups or up to 3 years old pass-outs.
- A team is allowed to have a preferably maximum of 4 members.



## PRELIMINARY EVALUATION (ABSTRACT FORMAT)

- i. Title
- ii. Team Details
- iii. Abstract (Max 2 pages)

1. Objectives
2. Use case details (specifics of the application of technology)
3. Methodology and Outcomes

## FINAL EVALUATION (PRESENTATION AND/OR PRELIMINARY DEMONSTRATION ON SUBMITTED ABSTRACT)

### EVALUATION CRITERIA

1. All the submitted applications would be reviewed by our evaluators under different focus areas. Each application will be assessed by a set of evaluators to ensure the best submission gets selected for the next round.
2. The applications will be evaluated on different parameters namely, including but not limited to the creativity and novelty of the idea/innovation, originality, scalability, technology advantage, potential impact, and implementation ability of idea and team.
3. The evaluation committee reserves the right to select or reject any submission without assigning any reasons whatsoever and without thereby incurring any liability to the participant(s) whatsoever.
4. The preference will be given to the participants who plan to appear in the “develop stage” competition.



## REGISTRATION AND ABSTRACT SUBMISSION

The Participants have to register on the official Techfest Website and fill all the necessary details. [www.techfest.org](http://www.techfest.org) ->Competitions->Stress Prediction TiH-IoT -> Explore More -> Register -> Fill all your details - > Now you must create/Join a team

The Abstract should be mailed with the subject '**Ideate: 'Stress Prediction' Project** Report: (for e.g., Ideate: "Stress Prediction" Project Report: SP12345). The abstract must be submitted in PDF format only and mailed to [stressprediction@techfest.org](mailto:stressprediction@techfest.org)

**Submit your abstract in the google form also.**

<https://forms.gle/wQmJrCTwE38Kf1Xg8>

## SHORTLISTING

- a) Top 3 teams (depending on the feasible ideas) will be selected from each use case and would get a chance to present and or demonstrate their model/idea in Techfest IIT Bombay which will be from **16th-18th December**.
- b) Participants will get a slot for presenting their model/idea to the Judges based on which they will be evaluated.

## CERTIFICATE POLICY

Only those teams that are shortlisted for the finals and give a final presentation and or demonstration during Techfest 2022-23 would be awarded an e-Certificate of Participation.

## REWARDS

- a) Top three teams could be awarded INR 50,000, INR 30,000, and INR 20,000 as the winner, 1<sup>st</sup> runner-up, and 2<sup>nd</sup> runner-up teams respectively for each use case.
- b) Opportunity for the next level of funding for the continuation of the work on the idea which may be upto Rs. 1L support from TIH IoT per team.



- c) Final decision on the number of prizes will be based on the recommendations of the committee

**PRIZES:**

The prize money will be awarded to top 3 winners via NEFT and will be processed within 30 working days after receiving the prize money from sponsors.

Winners have to mail the following information (immediately after the announcement of results) to [abhishek@techfest.org](mailto:abhishek@techfest.org)

**FORMAT OF MAIL :**

Subject: Stress Prediction, <Team ID> - <Your Position>  
(example- Stress Prediction, HA1003 - 3rd Position)

**Body of mail:**

1. Account Holder's Name
2. Account Number
3. Bank name and Branch name.
4. IFSC Code



**TIMELINE**

First Abstract Report Submission	9th December 2022	Submission of First Draft Report
Last Date of Registration	9th December 2022	Participants need to register before this date
Shortlisting of the Abstracts	12 <sup>th</sup> December 2022	Declaration of shortlisted teams to work for presentation reports
Submission of the presentation	17 <sup>th</sup> December 2022	Shortlist will submit their presentation which they will showing at Techfest IIT Bombay
Presentation based on Abstract	18 <sup>th</sup> December 2022	Teams will present their idea at Techfest IIT Bombay before judging panel.
Winners of the Ideation Competition	18 <sup>th</sup> December 2022	Winners will announce of the presentation round at Tehfest
Develop Stage	From 18th December 2022-March 2023	Shortlisted participants are to develop upon their model and prepare a presentation for the final round.
Demonstration of the working model	3 <sup>rd</sup> week of March 2023	Final working model will demonstrate by the teams.
Declaration of the Winners	4 <sup>th</sup> week of March 2023	Winners will be announced based on their final demonstration of their working model