



Department of
Science &
Technology,
Government of
India



NMICPS Technology Innovation Hub on Autonomous Navigation Foundation (TiHAN) at IIT Hyderabad



Funded by DST National Mission on Inter-Disciplinary Cyber Physical Systems



TiHAN-IITH: Vision

Hub for Safe, Sustainable, Smart Next Generation Mobility

Real-time Autonomous Navigation and Data Acquisition Systems (Unmanned - UAVs, ROVs, etc.)

Quality Data Acquisition for Aerial/Terrestrial Mobile Environments
Multi-sensory Perception Scenario (UAVs, ROVs.), AI Framework,
Real-time Edge Compute Architecture, Communication Networking,
Testing Validation, Simulators (Virtual/Physical), Design

Standard Operating Procedures (Autonomous UAVs, ROVs, etc.)

Testbed/Living Labs for Autonomous Navigation Systems (Aerial and Terrestrial Vehicles)

Autonomous Transportation Systems (Aerial/ Terrestrial/Surface)

Agriculture & Farming Infrastructure & Environment Defence & Surveillance

Re-imagine ways of working with industry and academic partners to accelerate change



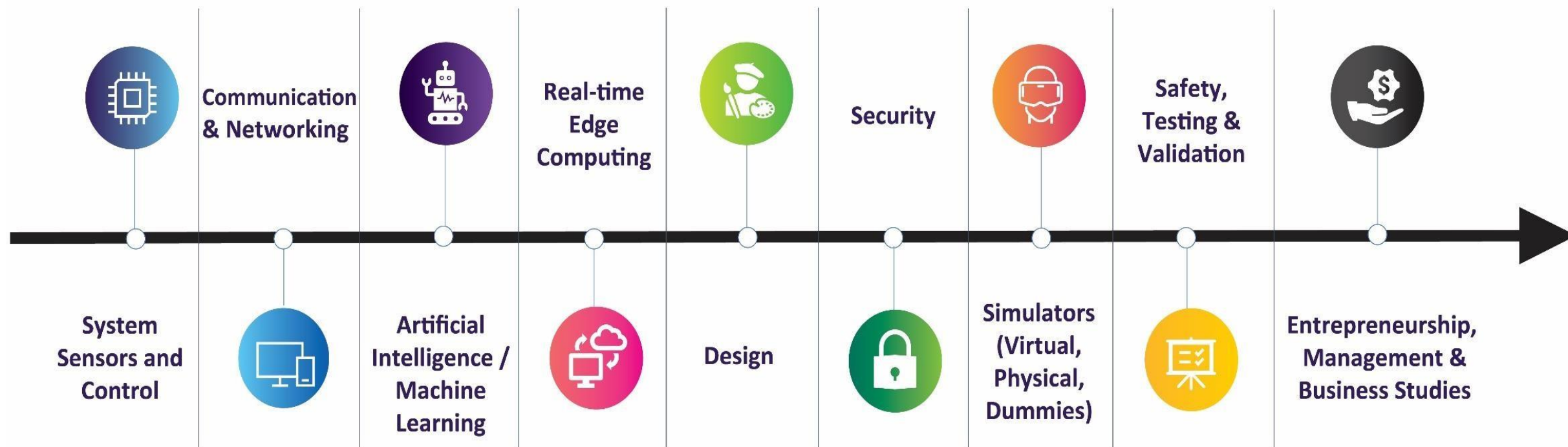
TiHAN – IITH: Activities

TiHAN-IITH: Source for fundamental knowledge and technologies (IPs, Publications, Products, Commercialisation as Licencing, ToTs...) in the technology vertical of *Autonomous Navigation and Data Acquisition Systems*.

... and we do
this every day



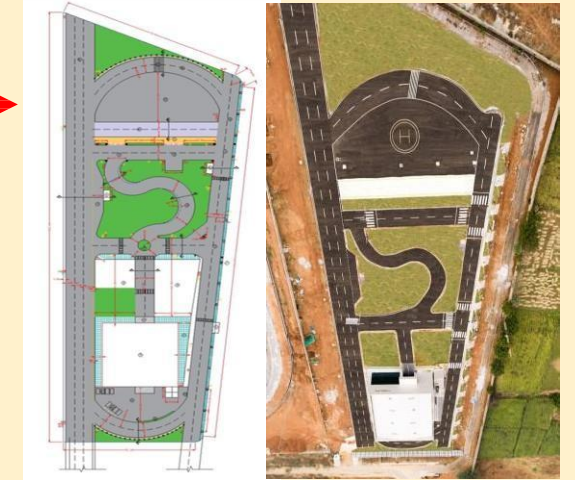
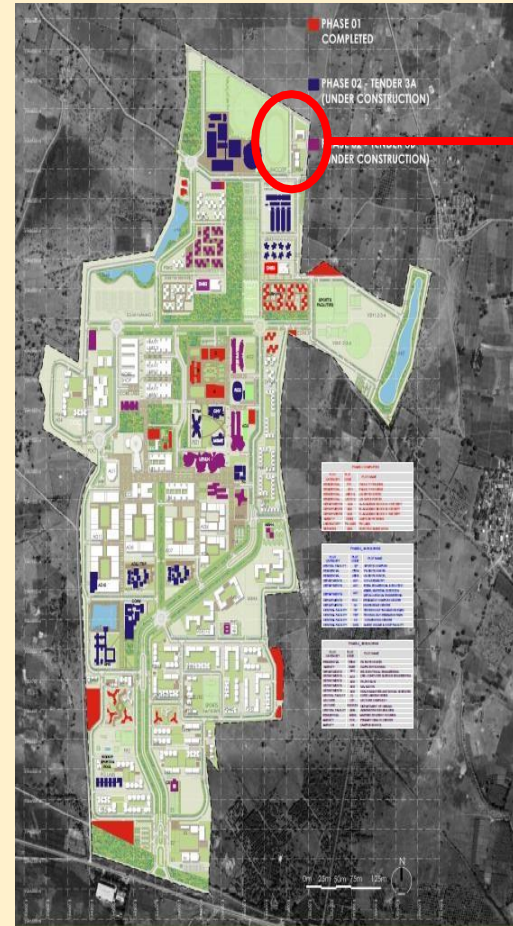
TiHAN Core Research/Work Groups



Autonomous Navigation Testbed (Aerial/Terrestrial) at IITH

Testbed Facility

- A first of it's kind state-of-the-art testbed for Autonomous Navigation (Aerial/Terrestrial)
- Technology development and thorough validation before going for real field deployment
- Facilities include – Proving Grounds, Test tracks, Mechanical integration facilities like Hangers, Ground control stations, State of the art Simulation tools (SIL, MIL, HIL, VIL), Test tracks/circuits, Road Infra – Smart Poles, signalized & unsignalized Intersections, Environment Emulators like Rainfall Simulators , V2X Communications, Drone Runways & Landing area, Control Test centers...



Location of Testbed Within IITH



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TiHAN Testbed Inauguration Events



विज्ञान एवं प्रौद्योगिकी विभाग
DEPARTMENT OF
SCIENCE & TECHNOLOGY




NM-ICPS TECHNOLOGY INNOVATION HUB ON AUTONOMOUS NAVIGATION (TiHAN) FOUNDATION - IIT HYDERABAD

**Prof. BS Murty, Director, IIT Hyderabad
solicits your august presence for inauguration of**

**TIHAN - IITH AUTONOMOUS NAVIGATION TESTBED
(AERIAL & TERRESTRIAL)**









Schedule

11:00 AM	• Inauguration of TiHAN-IITH Testbed on Autonomous Navigation (Aerial & Terrestrial)
	• Technology Demonstrations
	- Autonomous Electric Shuttle Vehicle
	- Unmanned Aerial Vehicle/Drones
	Bio-Inspired Micro/Nano drones, Air-Cargo Drones, Accurate Navigation and Landing, BVLOS
	- Autonomous E-Bike
	- Autonomous Humanoid Robot
	- Tour of Test Track
11:40 AM	Proceeding to A-Block Auditorium
11:45 AM	Welcome address by Prof. BS Murty – Director IITH
11:48 AM	R&D at IITH by Prof. Kiran K Kuchi – Dean (R&D)
11:51 AM	Brief on TiHAN-IITH by Prof. P. Rajalakshmi - Project Director
11:54 AM	Address by Dr. BVR Mohan Reddy - Chairman, BoG, IITH
11:59 AM	Address by Dr. Srivari Chandrasekhar - Secretary, DST
12:09 PM	Address by Dr. Jitendra Singh Hon'ble Minister of State (Independent Charge) of the Ministry of Science and Technology & Earth Sciences
12:24 PM	Vote of Thanks – Prof. Raja Banerjee, Dean (Administration)
12:27 PM	National Anthem

04th JULY 2022

Chief Guest

Dr. Jitendra Singh
Hon'ble Minister of State (Independent Charge) for Science and Technology & Earth Sciences

In the presence of

Dr. Srivari Chandrasekhar
Secretary, Dept. of Science & Technology (DST)
Government of India

Dr. B.V.R. Mohan Reddy
Chairman,
Board of Governors, IIT Hyderabad

Click here to Join : <https://youtu.be/IUvcs40w9NQ>





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TiHAN Testbed Inauguration Events



Foundation stone for the TiHAN Testbed for Autonomous Navigation Systems was laid on December 29, 2020 by Shri Ramesh Pokhriyal 'Nishank', Honorable Minister of Education, Govt. of India at IIT Hyderabad



Some Industry Visits/Collaborations to TiHAN IITH



Suzuki Motor Corporation (SMC) Japan Visit



Continental - UK team



Dr. Derrick, Science Director, Naval Research Global,
US Embassy Singapore



ZF along with German team Visit



© TiHAN-IITH



Visit of Dr. Kris Gopalakrishnan to TiHAN during IITH Foundation Day 9 April 2022



TiHAN collaboration with ICRISAT for UAV Based Agricultural Research

ICRISAT (International Crop Research Institute for Semi-Arid Tropics) received project from TiHAN in 2021 for developing pipeline for UAV based field phenotyping of dryland crops. Dryland crops are crop of poorest and smallholder farmers mainly dual type (grain and stover). The crop improvement is comparatively slow due to manual phenotyping in breeding process. UAV based phenotyping can leverage the rapid improvement in yield and stover for livestock.

The work has been showcased during PM Shri Narendra Modi Ji visit to ICRISAT Hyderabad.



UAV based field phenotyping research at ICRISAT and TiHAN



Prime Minister Shri Narendra Modi visit to ICRISAT- Update on UAV based Digital technologies .



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Success Stories of TiHAN Foundation



India International Science Festival 2023

17th to 20th January, 2024

DBT THSTI - RCB Campus

NCR Biotech Science Cluster 3rd Milestone,
Faridabad-Gurugram Expressway,
Faridabad - 121001 Haryana (NCR Delhi), India



Training session on Quality Management System

Training session on Quality Management System

Conducted by : Quality Council of India

Trainers : Mr. CS. Sharma

: Mr. NK. Dhir

Date : 08th December 2023



TiHAN IITH Participated in Telangana Mobility Meet with Industries Aisin and Elonroad on January 18th or 19th, 2024 at Hyderabad.



TiHAN is participating in the Advanced Air Mobility Conference at Wings India 2024 Hyderabad





Success Stories of TiHAN Foundation

TiHAN IIT Hyderabad had participated in the 16th International Conference on Communication Systems & Networks (COMSNET 2024) on January 3 - 7 at Chancery Pavilion Hotel, Residency Road, Bengaluru, India. An initiative by the COMSNETS Association.



SkyDrive collaborates with TiHAN IIT, Hyderabad to create logistics drone market in India.

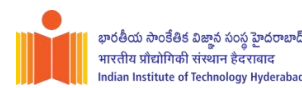


[IHFC \(TIH of IIT Delhi\)](#) has organized the first ever of its kind Lab to Market: Workshop cum Training Program for all PIs & officials from all Technology Innovation Hubs (TIH).





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Success Stories of TiHAN Foundation

MEMORANDUM OF UNDERSTANDING

**Best Paper Award - TiHAN IIT Hyderabad
-"Enhancing Sidelink 5G V2V
Communication: A Distributed
Probabilistic Congestion Control for
Dynamic Resource Allocation," has
clinched the Best Paper Award in the
Women in Engineering track at the 17th
IEEE International Conference on
Advanced Networks and
Telecommunication Systems (ANTS'23),
hosted at Malaviya National Institute of
Technology Jaipur.**

**Best Paper Award - TiHAN IIT Hyderabad -
INDIAN GEOTECHNICAL CONFERENCE 2023
GEOTECHNICAL ADVANCES IN SUSTAINABLE
INFRASTRUCTURE DEVELOPMENT AND RISK
REDUCTION
Dec. 14-16,2023 | Department of Civil
Engineering, IIT Roorkee**

MUTUAL NON-DISCLOSURE AGREEMENT

THIS MUTUAL NON DISCLOSURE AGREEMENT is made and entered into on this the 04th day of January 2024 executed by and between:

Danlaw Technologies India Limited, a Company incorporated under the Companies Act, 1956, having its registered office at Unit Nos.:201, 202 & 203, Geyra Fountainhead, HUDA Techno Enclave, Patranagar, Madhapur, Hyderabad-500081, Telangana (hereinafter referred to as "DTIL" which expression shall, unless repugnant to the context or meaning thereof, be deemed to mean and include its successors-in-interest and permitted assigns).

and

NMICPS Technology Innovation Hub on Autonomous Navigation Foundation, a Section-8 Company incorporated under the Companies Act 2013, and having its registered office at IIT Hyderabad, IITH Main Road, Kandi, Sangareddy, Telangana 502284 (hereinafter referred to as "TIHAN-IITH" which expression shall, unless repugnant to the context or meaning thereof, be deemed to mean and include its affiliates, successors-in-interest and permitted assigns).

"DTIL" and "TIHAN-IITH" shall be individually referred to as a "Party" and collectively as "the Parties".

WHEREAS "DTIL" is inter-alia, a global leader engaged in the business of Connected Car and Automotive Electronics, creating innovative technology for some of the world's largest car makers and, has developed and acquired and possesses technical knowledge and has intellectual property rights in the form of designs, engineering processes, technological and other information with respect to the same.

WHEREAS TIHAN-IITH is engaged in the business of development of autonomous navigation and data acquisition technologies.

WHEREAS "DTIL" and "TIHAN-IITH" desire an opportunity to review each other's Confidential Information as set forth herein for the purpose of Autonomous & Connected Vehicles (the "Purpose") on the condition that the Parties provide proper safeguards to protect each other's Confidential Information of them and their business, which information the receiving Party would not otherwise receive nor have or gain access to. The Parties agree that Confidential information may be provided or received by a Party's Affiliates as defined in Section 12.2 of this Agreement and that any Affiliates of a Party providing or receiving Confidential Information will be subject to the protections and obligations of this Agreement.

WHEREAS, the Parties are concerned about protecting the confidential, secret and proprietary information of each other, and preventing damage to the other Party and its business should any Party improperly use, or any third party improperly gain access to such information in total or in part. Both Parties hereby undertake to only disclose the information to their employees, representatives and/or associates who need to know the information to allow Recipient to involve in connection with the Project and then only to the extent that is absolutely necessary. Both Parties further undertake to ensure that all employees, representatives and/or associates to whom any information is disclosed under this Agreement are aware of the terms of this Agreement and comply with this Agreement. The Recipient shall be responsible for any breach of this Agreement by any of its employees, representatives and/or associates.

NOW, THEREFORE, in consideration of the foregoing and of the mutual covenants and agreements hereinafter set forth and intending to be legally bound the Parties hereby agree as follows:

1. Definition of Confidential Information. The term "Confidential Information" includes all information, software and/or hardware, technology, processes, methods, electrical, electronic, PCB and/or tool design and any other or related data furnished by either Party (the "Disclosing Party") to the other Party (the "Receiving Party"), whether in oral, written, graphic or machine-readable form, including but not limited to, the information identified as confidential by each and materials relating to images, sounds, documentation, designs, improvements,

P. Balakrishna
DANLAW TECHNOLOGIES INDIA LIMITED

This Memorandum of Understanding (this "MOU") is made and entered into on December 25 2023 (the "Effective Date") by and between:

- (1) NMICPS Technology Innovation Hub on Autonomous Navigation Foundation, a Section 8 company founded at IIT Hyderabad and having a registered office at IITH Campus, IITH Main Road, Kandi, Sangareddy, Telangana 502284, India ("TIHAN-IITH" or "TIHAN"); and
- (2) SkyDrive Inc., a corporation duly organized and existing under the laws of Japan, having its place of business at 2-16-1, Konan, Minato-ku, Tokyo 108-0075, Japan ("SD" or "SkyDrive").

TIHAN-IITH and SD shall be individually hereinafter referred to as a "Party" and collectively as the "Parties."

RECITALS:

WHEREAS, the Parties consider to establish a Collaboration for developing and carrying out activities related to heavy lifting drone ("Business Activities") in India ("Territory") in a form to be agreed upon by the Parties ("Collaboration").

WHEREAS, the Parties wish to indicate their current intentions on the Collaboration in this MOU.

NOW THEREFORE, the Parties have mutually agreed as follows:

1. Intention of Parties.
The Parties will exchange information, subject to other terms and conditions provided in this MOU, for each Party to consider the possible Collaboration; provided however, that nothing in this MOU shall be construed as a commitment of either Party to establish the Collaboration.
2. No Public Statements.
Neither Party shall issue or release any announcement, statement, press release, or other publicity or marketing materials relating to this MOU, otherwise use the other Party's trademarks, service marks, trade names, logos, domain names, or other indicia of source, association, or sponsorship in each case, without the prior written consent of the other Party.

**Collaborations DANLAW
Technologies India Limited**

**Collaborations with
SkyDrive Inc.**



Success Stories of TiHAN Foundation

[TiHAN IIT Hyderabad](#) demonstrated an Autonomous Shuttle at the [InvenTiv](#) Event, Inaugurated by Honorable Shri [Dharmendra Pradhan](#), Minister of Education & Skill Development, Government of India.



[TiHAN IIT Hyderabad](#) welcomes a distinguished delegation from [Applied Materials](#)—CTO, Director, Vice President, Senior Managers, and VC—an insightful confluence of industry and academia to fuel the future of technology.



Success Stories of TiHAN Foundation

Institute of Defense Scientists and Technologies and R&DE (Engrs) is organizing a two-day Conclave on Autonomous Vehicles on 11 and 12 Jan 2024 at Pune where TiHAN IITH is participated n technology demonstration expo - Stall Exhibition.





Success Stories of TiHAN Foundation

TiHAN-IITH Participated in motion in control 2023 Vehicle Dynamics & ADAS Conference on 30th Nov & 1st Dec 2023 at GARC, Chennai.



TiHAN-IITH actively participated in the MOTION IN CONTROL(MIC2023) held at ICAT, Manesar, Gurgaon on 21st & 22nd November 2023.



TiHAN-IITH actively participated in the one-day industry meet organized by C-DAC Hyderabad and Thiruvananthapuram. The event focused on "CONNECT VEHICLE TECHNOLOGIES FOR INDIA," on 17th November 2023.



In-house training program Voluntary Vehicle-Fleet Modernization Program (V-VMP)" from 20 - 22 November 2023 (3 days) - Sponsored by Ministry of Road Transport & Highways, Government of India at TiHAN IT Hyderabad.



Success Stories of TiHAN Foundation

TATA Motors Leadership Explores Innovations at TiHAN Foundation, IITH Hyderabad! Grateful for the insightful visit and collaborative discussions on ADAS technologies with Mr. Suresh Arikapudi – Sr. GM Advanced Engineering - EV, Mr. Sanjeev Maralihalli – GM – E&E PV, Dr. Sagar Tikar – DGM – E&E CV, Mr. Santosh Lonkar – GM L&D .



BAJA SAEINDIA 2024





TiHAN - IITH actively participated in the SOUTHERN STAR ARMY ACADEMIA INDUSTRY INTERFACE EVENT AT SECUNDERABAD, Dr. Naga Praveen Babu Mannam (HEO) interaction with Major General Rakesh Manocha, GOC, Telangana, and Andhra sub-area.



Visit of Collins Aerospace to TiHAN IIT Hyderabad on 21-11-2023





Success Stories of TiHAN Foundation

[Human Resource Development]

Program Objectives: Human resource in the field of Autonomous Navigation and Data Acquisition systems is essential to ensure that there is a skilled and knowledgeable workforce capable of designing, developing, maintaining, and operating these complex systems. It involves academic programs, skill development, certificate programs, R&D, Industry Collaboration, mentorships programs etc.,

1. Curriculum and Content: (Briefly)

• Smart Mobility (M. Tech) Program at IITH:

TiHAN in collaboration with IIT Hyderabad has established a New Interdisciplinary 2-year M. Tech program on Smart mobility which is first of its kind in the country. The first batch of SM 2020 and 2021 has achieved 100% placement in prominent companies.

Delivery Method: Lectures, workshops, case studies, simulations, etc.

2. Industry Partnerships and Collaboration:

UC Berkeley, USA, Metro Infrasy Pvt. Ltd, Institute of Rural Management Anand (IRMA), Natrax, Space Kidz India, Tata Technologies Limited (TTL), LTTS, Skydrive Inc.

3. Conducted **67 skill development programs** at various levels in the area of autonomous navigation with different spokes.

The total **number of participants is 3595**

4. **TiHAN IIT Hyderabad Collaborated with TSSC.**

Costing:

(In Lakhs)

Duration: Upto Jan 2024

Certification and Recognition:

Certification Program – Certificate Issued.
Academic Program – M. Tech Degree offered.

Employability and Career Advancement:



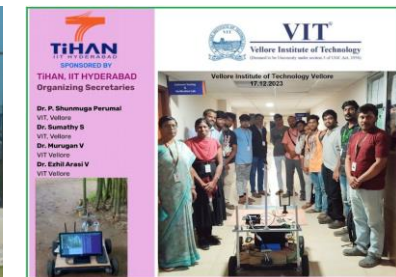
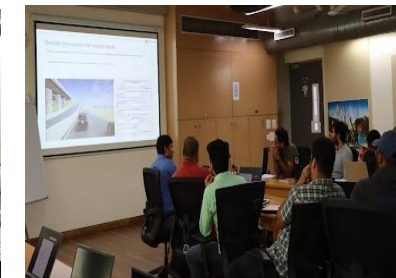
SM 2020 - 2022



SM 2021 - 2023

Participant Outcomes:

Technical Skills and Knowledge, and Enabling Placements.





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TiHAN IITH – InterHub Activities



It is with immense pride, TiHAN-IITH Foundation, participated in ROSCon India 2023. TiHAN showcased its ROS-based activities at the ROSCon and brainstormed on the developments in ROS with various delegates from the ROS community.






I HUB-DATA MOBILITY SUMMIT-2023






HIGHLIGHTS

- Keynote speakers from Academia, Industry and Government
- Startup stalls
- Spotlight sessions on Wheelchair, 2-wheeler & mmWave radar
- Poster presentations on all mobility projects
- Mobility platform tours

DATE & VENUE:
27 & 28 OCTOBER 2023
IIIT HYDERABAD

Contact us:
✉ mobilityoutreach@research.iit.ac.in



ART PARK

AI & Robotics Technology Park, I-Hub @ IISc



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TiHAN EVENTS



IIT Tirupati
Navavishkār
I-Hub Foundation

Seminar on

NavIC - the Game Changer

**Enabling Positioning and Precision
Technologies in India and beyond**

22nd and 23rd January 2024

VENUE - **BEL Academy for Excellence (Nalanda), Bengaluru**

Jointly organized by

- ▶ IIT Tirupati Navavishkar I-Hub Foundation
- ▶ Bharath Electronics Limited (BEL) India
- ▶ IIITB COMET Foundation



IIT (ISM)

TEXMiN



**iHub Anubhuti-
IIITD Foundation**



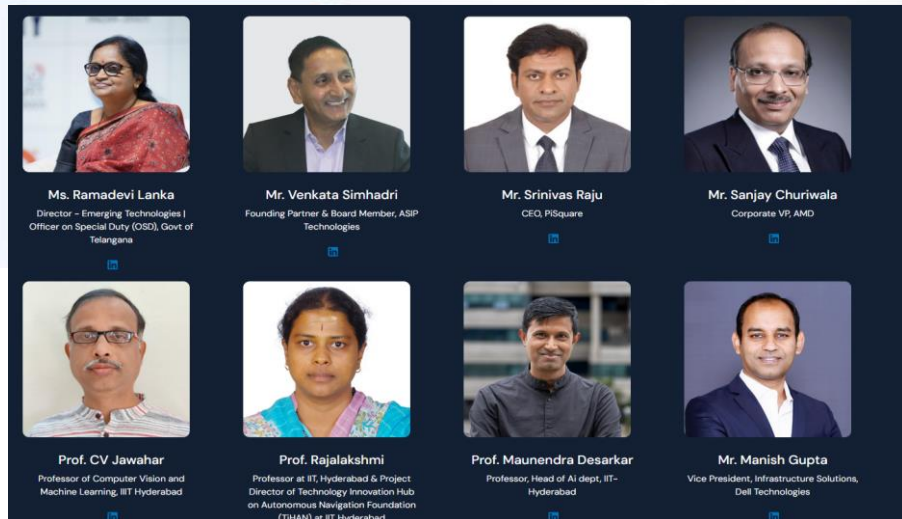
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TiHAN International Conferences/Workshops



ಭಾರತೀಯ ಪಾಂಚೇತಿಕ ವಿಜ್ಞಾನ ಸಂಸ್ಥೆ ಪ್ರಾದರಾಭಾರ್ಡ್
ಭಾರತೀಯ ಪ್ರಾಚಾರಗಿಕಿ ಸಂಸ್ಥಾನ ಹೈದರಾಬಾದ್
Indian Institute of Technology Hyderabad



TiHAN IITH Participated in **COMSNETS 2024**.



TiHAN IITH Participated in **Wings India 2024** from 18th to 21st January 2024 in Hyderabad, India. Advance Air Mobility – India.

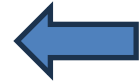


International

- ✓ Visits by Japanese SMEs to the TiHAN to learn about the TiHAN Foundation and its activities



- ✓ The Mitsubishi Electric team from Japan is here at TiHAN



- ✓ The sharp team from Japan visits to TiHAN



International

- ✓ Lee Summerhayes, Professor at Cardiff and Vale College, and John Heir, Lecturer at Gower College Swansea, as part of the T-Hub Taith EV Consortium engagement. Potential collaborations in the development of an EV course curriculum for undergraduate students in Level 4/Level 5, as per UK standards, were discussed during the TiHAN visit.

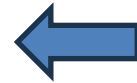


- ✓ NMICPS TiHAN IIT Hyderabad and Skydrive Sign MOU for Advance Drone Research

TiHAN Achievements

National

- ✓ CTW of the Military College of Engineering, Secunderabad visited the TiHAN



- ✓ Thank you for extending an invitation to participate at the International Road Federation - Indian Chapter national conference-cum-exhibition on "Revolutionizing Infrastructure with New Technologies & Sustainable Materials". It was indeed our pleasure to present new research activities and innovations at TiHAN for road infrastructure and road safety and to interact with various stakeholders

- ✓ We're thrilled to announce the successful completion of the "Discovering Drone Innovations: Design, Technology, and Perception Skills" upskilling program at RAJIV GANDHI UNIVERSITY OF KNOWLEDGE TECHNOLOGIES, NUZVID. This program equipped participants with the latest knowledge and skills in various aspects of drone technology, from design and engineering to perception and data analysis.



TiHAN Achievements

National

✓ Extended gratitude to Mr. Sanjay Sinha for your enlightening talk! Dived into the realm of real-time governance with his expertise, unraveling the essence of data-driven decision-making. Your insights are invaluable for navigating the digital age.



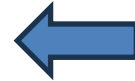
✓ Embarking on a journey of innovation! Delighted to have visited Tata Motors for discussions on potential technology collaboration.

✓ The successful conclusion of SIAT 2024! As Session Chair for the Advance Driver Assistant System, Prof. Rajalakshmi exemplified excellence and innovation at the Symposium on International Automotive Technology



National

- ✓ TiHAN participated in the "India Pipeline Meet 2024" held in New Delhi! Our team had the honour of presenting the latest advancements in pipeline detection technology, showcasing our cutting-edge research and innovative products to industry peers and experts



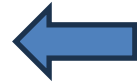
- ✓ Mr. Surendra Tipparaju Tipparaju, Sr. Director at Microsoft, and Mr. Murali Krishna Ravipati, Managing Director of Avontix Global, visit TiHAN to explore opportunities for research collaboration. Discussed various use case possibilities for the adoption of AI in the Industry.

- ✓ A heartfelt thank you to Mr. Subramanian Nadar from Adani port for his enlightening industrial lecture on inspiring innovations and insights! His expertise and forward-thinking approach are truly commendable, and we're grateful for the invaluable knowledge shared



National

- ✓ Delighted to have participated in the AI Horizons workshop at the Society of Women Engineers (SWE) hosted by MathWorks Hyderabad! It was an inspiring session on shaping the present and navigating the future of AI



- ✓ Wrapped up an insightful industrial lecture with Ms. Richa Singh from MathWorks. Her industrial lecture on 'Developing Autonomous UAV Applications with MATLAB/Simulink' was packed with valuable awareness

- ✓ Honoured to have Dr. Neeraj Mittal, Secretary, Department of Telecommunications, Government of India, visit the TiHAN Foundation.



TiHAN Achievements

National

✓ A special visit from Mr. KM Chandrasekhar, former Cabinet Secretary, to the TiHAN Foundation. An inspiring moment to witness



✓ Proud sponsor at mBAJA and hBAJA 2024 SAEIndia events at NATRAX Pithampur, which witnessed around 2000 students from across India in an exhilarating ATV race. Honoured to be part of the SAEIndia BAJA judging team, evaluating innovative designs and witnessing incredible hands-on talent



✓ TIHAH IIT Hyderabad and Danlaw Technologies India Limited Collaborate on Connected Mobility Innovations"



National

- ✓ In-house training program “Transportation in the Twenty-First Century Technological Innovation ” from 22 – 24 January 2024 - Sponsored by Ministry of Road Transport & Highways, Government of India, New Delhi. Technology Demonstration Event at TiHAN - IIT Hyderabad



- ✓ Happy to Share the Future: TiHAN IIT Hyderabad Showcases Autonomous Ground and Air Vehicles technologies at India International Science Festival 2023

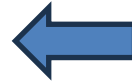
- ✓ Grateful to WingsIndia2024 for the incredible opportunity to delve into the future of Advanced Air Mobility at the India Conference! Sharing the sky-high possibilities and innovations in air transportation



TiHAN Achievements

National

- ✓ TiHAN - IIT Hyderabad Team at CATS-2024 Conclave, presenting insights on autonomous technology at the prestigious DRDO Golden Jubilee Auditorium in Pune. Engaging with national research organizations and industry partners, the event showcased TiHAN's contributions and facilitated valuable knowledge exchange, reinforcing our commitment to innovation in autonomous technologies



- ✓ TiHAN - IIT Hyderabad demonstrated an Autonomous Shuttle at the InvenTiv Event, Inaugurated by Honourable Shri Dharmendra Pradhan, Minister of Education & Skill Development, Government of India

- ✓ TiHAN - IIT Hyderabad welcomes a distinguished delegation from Applied Materials-CTO, Director, Vice President, Senior Managers, and VC - an insightful confluence of industry and academia to fuel the future of technology



National

✓ TiHAN Foundation -IITH & ISSED IRMA jointly collaborated and conducted the Autonomous Navigation for Transforming Rural Areas (ANTRA Grant Challenge Program). TiHAN-IITH interacted with the applicants of the proposal on 06.01.2024 was physically held at IIT Hyderabad



✓ Five-days Workshop on Unmanned Aerial Vehicles by (Theory & practice)

✓ TATA Motors Leadership Explores Innovations at TiHAN Foundation, IITH Hyderabad! Grateful for the insightful visit and collaborative discussions on ADAS technologies with Mr. Suresh Arikapudi – Sr. GM Advanced Engineering - EV, Mr. Sanjeev Maralihalli – GM – E&E PV, Dr. Sagar Tikar – DGM – E&E CV, Mr. Santosh Lonkar – GM L&D.



National

- ✓ TiHAN - IIT Hyderabad had participated in the 16th International Conference on Communication Systems & Networks (COMSNET 2024) on January 3 - 7 at Chancery Pavilion Hotel, Residency Road, Bengaluru, India. An initiative by the COMSNETS Association.



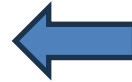
- ✓ COMSNETS 2024 Workshop on "Connected Vehicles & Autonomous Driving(CVAD)

- ✓ Visit of Prof. Ashok Misra Former Director of IIT Bombay, Prof. B S Murty Director of IIT Hyderabad



National

- ✓ It is with immense pride, TiHAN-IITH Foundation, participated in ROSCon India 2023. TiHAN showcased its ROS-based activities at the ROSCon and brainstormed on the developments in ROS with various delegates from the ROS community



- ✓ Completion of the Advanced Drone Innovation (ADI) Certification Course



Industry Meet on "Connected Vehicles Technologies for India"

A one-day industry meeting on "CONNECTED VEHICLE TECHNOLOGIES FOR INDIA", organized by C-DAC Hyderabad and Thiruvananthapuram, in association with TiHAN-IITH Foundation, was held on 17-11-2023 at Hotel Radisson, Hitec City, Hyderabad. Stakeholders who participated in this meeting were over 60 in number including industry partners (25), line of ministries (MeitY, MoRTH, DoT), regulatory authorities (BIS, MoRTH, SESEI), and potential customers (NHAI, TSRTC) absorbing the developed indigenous technology.



- ✓ TiHAN - IITH actively participated in the Industry Meet on "Connected Vehicles Technologies for India"



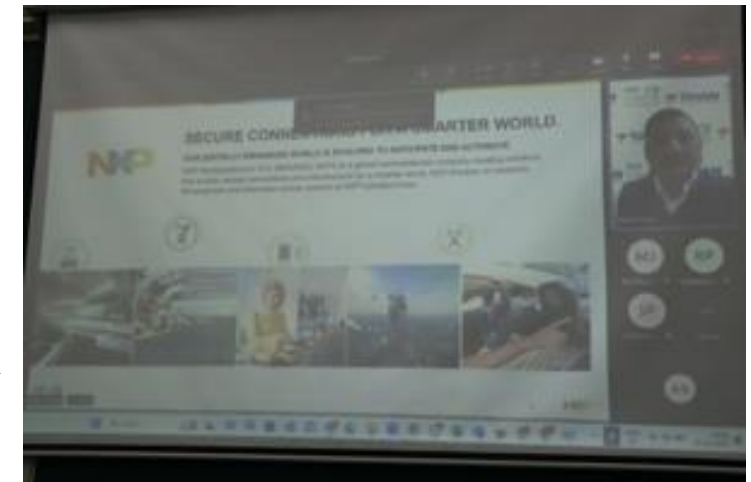
National

- ✓ IITH Alumni visited TiHAN - IITH and witnessed the groundbreaking TiHAN Autonomous Campus Shuttle (ACS)



- ✓ TiHAN - IITH actively participated in the SOUTHERN STAR ARMY ACADEMIA INDUSTRY INTERFACE EVENT AT SECUNDERABAD, Dr. Naga Praveen Babu Mannam (HEO) interaction with Major General Rakesh Manocha, GOC, Telangana, and Andhra sub-area

- ✓ NXP Campus Connect "Software Defined Vehicles & Future": Webinar on December 19th co-hosted by NXP and TiHAN IIT Hyderabad

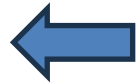


National

✓ Tata Motors - Leadership Visit to TiHAN - IIT Hyderabad



✓ TiHAN - IITH actively engaged in a one-day training session focused on the "Quality Management System"



✓ TiHAN - IITH actively participated in the MOTION IN CONTROL(MIC2023) held at ICAT, Manesar, Gurgaon



TiHAN Achievements

National

- ✓ TiHAN - IITH actively participated in the one-day industry meet organized by C-DAC Hyderabad and Thiruvananthapuram. The event focused on "CONNECT VEHICLE TECHNOLOGIES FOR INDIA"



- ✓ TiHAN - IITH Participated in motion in control 2023 Vehicle Dynamic & ADAS Mobility Event on 30th Nov & 1st Dec 2023 at GARC, Chennai

- ✓ Visit of Collins Aerospace to TiHAN IIT Hyderabad



TiHAN Achievements

National

- ✓ TiHAN-IITH, in Collaboration with Edutech, presents a workshop on "Autonomous Vehicles Research Studio Solutions"



- ✓ In-house training program Voluntary Vehicle-Fleet Modernization Program (V-VMP)" from 20 - 22 November 2023 (3 days) - Sponsored by Ministry of Road Transport & Highways, Government of India at TiHAN IT Hyderabad

- ✓ NMICPS TiHAN takes a flight into the world of governance with an exclusive demonstration of Drone Technology at Lal Bahadur Shastri National Academy of Administration, Mussoorie. Embracing the future



TiHAN Achievements

National

- ✓ TiHAN-IITH in collaboration with SiMa, presents a Technical Workshop on Edge computing Hardware



- ✓ TiHAN – IIT Hyderabad participated in the India Mobile Congress IMC2023, the largest telecom, media, and technology gathering in Asia, jointly conducted by the Department of Telecommunications (DoT) and the Cellular Operators Association of India (COAI). Dr. Abhay Karandikar, Dr. Akhilesh Gupta, Dr. Ekta Kapoor, and Dr. JBV Reddy represented TiHAN IIT Hyderabad at the event

National

✓ Great to have the LTTTS team visit us at TiHAN It was a day full of inspiration and collaboration



✓ Professor Byrav Ramamurthy, School of Computing at the University of Nebraska Lincoln visited TiHAN



End to End Connectivity : Multi-modal Transportation Solutions for Indian Scenarios – Going Forward

- Energy efficient autonomous navigation enabled different modes of Electric Vehicles:



e-bike



UAM Based PAV



UAM Based PAV



Autonomous Cars



e-bike



TiHAN - IITH

Destination for Next Generation Mobility Solutions

***Platform for collaborative research between Academia, Industry,
R&D Labs – National and International***

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