PAIR Network
at
Indian Institute of Technology Hyderabad

Reference No. : 582025000057

Saved By : Dr. Chandra Shekhar Sharma

Saved Date : 23-Jan-2025

PROPOSAL DETAILS

Dr. Chandra Mohan Sharma

Chief Scientist

Advanced Systems Laboratory

Defence Research and Development Organisation

CSIR Research & Innovation Institute of Technology, Hyderabad

Technical Committee Meeting Agenda

1.	Welcome Address by Director, ASL	
2.	Opening Remarks by Chairman, TCM	
3.	Confirmation of Minutes of the last TCM meeting held on 14 Jan 2026	
4.	Review of Action Taken Report (ATR)	
5.	Review of Ongoing Projects	
6.	Review of Completed Projects	
7.	Review of Proposed Projects	
8.	Review of Technical Publications	
9.	Review of Patents	
10.	Review of Technology Transfer	
11.	Review of Technical Manpower	
12.	Review of Infrastructure	
13.	Review of Budget	
14.	Any other points with the permission of the Chairman	
15.	Closing Remarks by Chairman, TCM	

Technical Committee Members

Chairman	Dr. Chandra Mohan Sharma Chief Scientist, ASL	
Member	Prof. Sanjay Kulkarni Director, ASL	
Member	Dr. Manoj Kaushikkumar Scientist, Advanced Systems Laboratory	
Member	Prof. SHRUJEET MITRA Director, IIT Hyderabad	
Member	Prof. Sudhakar Sreenivas Director, IIT Madras	
Member	Dr. Sumant Sarkar Scientist, Advanced Systems Laboratory	
Member	Dr. Vinay Mishra Scientist, Advanced Systems Laboratory	
Member	Dr. Vanjiu Sikka Scientist, Advanced Systems Laboratory	
Member	Dr. Vijayant Trivedaraju Scientist, ASL	
Member	Dr. Kuntala Mehta Scientist, Advanced Systems Laboratory	
Member	Dr. Ganesh Kumar Scientist, Advanced Systems Laboratory	
Member	Dr. Aravind Rangaji Scientist, Advanced Systems Laboratory	
Member	Dr. Tulguru Dell Scientist, Advanced Systems Laboratory	
Member	Dr. Pradeep Tamula Scientist, ASL	
Member	Dr. Akanksha Khandelwal Scientist, Advanced Systems Laboratory	
Member	Dr. Nagarjuna Cherukuri Scientist, Advanced Systems Laboratory	
Member	Dr. Sankalpa Ray Scientist, Advanced Systems Laboratory	
Member	Dr. Sarthak Sahoo Scientist, Advanced Systems Laboratory	
Member	Dr. Arshadbabu C. Scientist, Advanced Systems Laboratory	
Member	Dr. Angel Ka Scientist, Advanced Systems Laboratory	
Member	Dr. Sumitrra Chanmugapriyan Scientist, Advanced Systems Laboratory	

Advisory Committee Members

Member	Prof. Balasubramanian Gugulothu Director, IIT Tirupati	
Member	Prof. Rudrapatna Sreenivas Director, IISc	
Member	Dr. Dilip Mishra Scientist, Advanced Systems Laboratory	
Member	Dr. M Bhanu Scientist, Advanced Systems Laboratory	
Member	Prof. Kishore Bathkavathula Chemistry	
Member	Dr. Shubhamsundaram Scientist, Advanced Systems Laboratory	
Member	Prof. B SUBHAKANTI Director, IIT Hyderabad	
Member	Dr. Vinaya Vijayananda Scientist, Advanced Systems Laboratory	
Member	Prof. Venkatachalam, Gopinathan Director, IIT Madras	
Member	Dr. M Mohandas Retired Scientist, ASL	
Member	Dr. Kodabakshi, Radha Scientist, Advanced Systems Laboratory	

Technical Committee Members

Member	Prof. Manish Joshi Director, Institute of Science	
Member	Dr. Kaushik Ghosh Scientist, Advanced Systems Laboratory	
Member	Dr. Jaichandar Kulandaivel Scientist, Advanced Systems Laboratory, Director, Advanced Systems Laboratory, Defence Research and Development Organisation, Ministry of Defence, Government of India	
Member	Dr. Manoharan Sankaran Director, Institute of Science	
Member	Dr. Vishal Sidhartha Scientist, ASL	
Member	Prof. SUBRATA MAHAPATRA Director, Institute of Science	
Member	Dr. Deepanshu Singh Scientist, ASL	
Member	Prof. Sudipta Sahu Chemistry	
Member	Dr. Nikita Thyagi Scientist, ASL	

Technical Committee Members

Member	Dr. Mahananda Tripathi Scientist, Advanced Systems Laboratory, Director, Advanced Systems Laboratory, Defence Research and Development Organisation, Ministry of Defence, Government of India	
Member	Dr. MOHA GUPTA IIRT Technology, Advanced Systems Laboratory	
Member	Dr. MAHESHPUTRA MIRLAM Scientist, Advanced Systems Laboratory	
Member	Dr. Vishnu Mangapuram Retired Scientist, Advanced Systems Laboratory	
Member	Dr. Arunima Ghosh[illegible] Scientist, Advanced Systems Laboratory	
Member	Dr. Bhupathirama S. Scientist, Advanced Systems Laboratory	
Member	Dr. Prof. Tulsi Retired Scientist, Advanced Systems Laboratory	
Member	Dr. Dhyan Ho Scientist, Advanced Systems Laboratory	
Member	Dr. Sanjeev Kumar Retired Scientist, Advanced Systems Laboratory	
Member	Dr. Pitsagar Kumar Scientist, Advanced Systems Laboratory	
Member	Dr. Sudip Sinha Scientist, Advanced Systems Laboratory	
Member	Dr. Sankar Chinna Scientist, Advanced Systems Laboratory	
Member	Dr. Raj Kaul Retired Scientist, Advanced Systems Laboratory	
Member	Dr. Ajeet Dhaka Scientist, Advanced Systems Laboratory	
Member	Dr. Nikita Thyagi Scientist, Advanced Systems Laboratory	
Member	Dr. Ashok Kumar Scientist, Advanced Systems Laboratory	
Member	Dr. Ashwin Kumar Scientist, Advanced Systems Laboratory	
Member	Dr. Ashwin Kumar Scientist, Advanced Systems Laboratory	
Member	Dr. Sunil Kumar Scientist, Advanced Systems Laboratory	
Member	Dr. Ashwin

Spoke R&D Profile

Central University of Andhra Pradesh

1	Number of SCI indexed papers published in last	0	Download PDF
2	Number of books published by the faculties in	23	
3	Number of patents filed during last 5 years	16	
4	Prestigious awards and fellowships received by the faculty members in last 5 years	12	Download PDF
5	Total number of regular faculty members	12	
6	Total number of faculty members with PhD	12	Download PDF
7	Number of startups incubated within the	0	

Indian Institute of Information and Technology, Raichur

1	Number of SCI indexed papers published in last	141	Download PDF
2	Number of books published by the faculties in	1	
3	Number of patents filed during last 5 years	5	
4	Prestigious awards and fellowships received by the faculty members in last 5 years	2	Download PDF
5	Total number of regular faculty members	14	
6	Total number of faculty members with PhD	14	Download PDF
7	Number of startups incubated within the	0	

Indian Institute of Information Technology Dharwad

1	Number of SCI indexed papers published in last	75	Download PDF
2	Number of books published by the faculties in	2	
3	Number of patents filed during last 5 years	4	
4	Prestigious awards and fellowships received by the faculty members in last 5 years	2	Download PDF
5	Total number of regular faculty members	33	
6	Total number of faculty members with PhD	33	Download PDF
7	Number of startups incubated within the	0	

Jawaharlal Nehru Technological University (Anantapur)

1	Number of SCI indexed papers published in last	226	Download PDF
2	Number of books published by the faculties in	90	
3	Number of patents filed during last 5 years	122	
4	Prestigious awards and fellowships received by the faculty members in last 5 years	47	Download PDF
5	Total number of regular faculty members	89	
6	Total number of faculty members with PhD	86	Download PDF
7	Number of startups incubated within the	0	

National Institute of Technology, Andhra Pradesh

1	Number of SCI indexed papers published in last	294	Download PDF
2	Number of books published by the faculties in	6	
3	Number of patents filed during last 5 years	20	
4	Prestigious awards and fellowships received by the faculty members in last 5 years	13	Download PDF
5	Total number of regular faculty members	56	
6	Total number of faculty members with PhD	56	Download PDF
7	Number of startups incubated within the	5	

National Institute of Technology Raipur

1	Number of SCI indexed papers published in last	1946	Download PDF
2	Number of books published by the faculties in	22	
3	Number of patents filed during last 5 years	51	
4	Prestigious awards and fellowships received by the faculty members in last 5 years	19	Download PDF
5	Total number of regular faculty members	226	
6	Total number of faculty members with PhD	217	Download PDF
7	Number of startups incubated within the	15	

Pt. Ravishankar Shukla University

1	Number of SCI indexed papers published in last	1485	Download PDF
2	Number of books published by the faculties in	64	
3	Number of patents filed during last 5 years	34	
4	Prestigious awards and fellowships received by the faculty members in last 5 years	78	Download PDF
5	Total number of regular faculty members	92	
6	Total number of faculty members with PhD	88	Download PDF
7	Number of startups incubated within the	1	

Basic Details of the Project

Project Title : Partnerships in Research for Advanced Technologies in Healthcare, AI, Materials & Energy (PRATHAME)

Duration : 60 Months

Action Plan for boosting research capability in Spoke

The IIT Hyderabad as a Hub through this unique partnership aims to stimulate innovation in seven spoke institutions chosen as per the ANRF PAIR guidelines by leveraging mentorship and seamless resource sharing. This proposal is carefully designed considering not only the gap areas of spoke Institutions but also the strength of IIT Hyderabad in those specific domains. This collaborative effort will drive impactful, internationally competitive research with significant outcomes. Further, it will also help establish collaborative networks, and boost research quality via advanced infrastructure and sharing best practices among each other.

Few specific action plan are as follows:

1. Collaboration and Mentorship

A total of 30 faculty from 10 different departments from the Hub Institute (IIT Hyderabad) will actively provide mentorship to guide early-career faculty and students from 7 spoke institutions in terms of research in cutting edge areas in selected domains (Advanced Materials, Energy Technologies, Healthcare Technologies and Artificial Intelligence) and also help them in teaching pedagogy. In particular, we propose to promote collaboration through joint Ph.D. supervision and semester-long research internship/project opportunities for M.Tech and M.Sc. students from Spoke Institutions.

2. Resource Sharing

IIT Hyderabad is well equipped with advanced research infrastructure. An equitable access on a priority basis will be provided to all these sophisticated instrumentation and computational resources through shared infrastructure agreements between hub and spoke institutions, and also among the spoke institutions. This ensures that each of these spoke institutions overcome equipment and funding limitations and enhance their R&D capability. A centralized resource registry can be implemented, scheduling shared equipment use and minimizing downtime.

3. Training and Workshops

IIT Hyderabad as a Hub Institute will organize recurring training programs and workshops (in both; physical and online mode) to build and further develop technical and soft skills for enhanced learning and research advancement. This includes but is not limited to hands-on training on advanced characterization techniques, computational tools, scientific writing, science communication and funding application strategies. A certificate system will motivate participation, while follow-up assessments can track skill enhancement.

4. Fostering the Innovation Culture:

To foster the innovation culture in these spoke Institutions, these will be connected directly with IITH Technology Innovation Park to support new startups and entrepreneurial ventures from the faculty as well as students (M.Sc./M.Tech. and PhD).

5. Funding and Networking

We also aim to provide support to all 7 spoke institutions in identifying the appropriate national and international funding opportunities and mentor them for preparing their grant application. We'll create a dedicated team within the hub to disseminate information on grants, fellowships, and industry collaborations. Also, for an overall professional development, we will introduce spoke Institutions researchers to professional societies, conferences, and global research networks.

6. Performance Monitoring and Feedback

We will establish clear performance metrics (no. of publications, no. of publications in Q1/Q2 journals. patents, citations) to evaluate progress. We will also conduct quarterly reviews, providing constructive feedback to refine strategies and ensure continuous improvement. A feedback mechanism that allows spoke institutions to voice challenges and suggest enhancements will also be put in place.

7. Development of New Interdisciplinary Programs

Building on the success of existing interdisciplinary programs at IITH, such as Polymer and Biosystems Engineering, Artificial Intelligence and Energy Science, Smart Mobility, and Medical Device Innovation, new academic programs will be designed for spoke institutions to address emerging challenges and drive advancements in cutting-edge research areas.

The overall aim of this proposal is that these seven spoke institutions can enhance their research & educational offerings, improve student outcomes, and contribute more effectively to the broader educational ecosystem.

Network Integration

1. Inter-Institutional Programs

Launch exchange programs for faculty and students, enabling them to spend a considerable time (1-3 months) at the hub institute for skill enhancement. Facilitate semester-long research projects for M.Tech and M.Sc. students at hub institutions to gain exposure to advanced techniques. Promote collaboration through joint Ph.D. supervision.

2. Knowledge Dissemination

Organize annual research symposia and workshops that bring together researchers from all participating institutions in the network. Publish joint newsletters and reports highlighting research progress and success stories within the network on a periodical basis.

3. Resource Sharing Agreements

Develop agreements to share high-end equipment and infrastructure, ensuring equitable priority access for spoke institutions. Schedule regular training sessions on using shared resources to optimize their utility and also to enhance their learning.

4. Feedback Mechanism

Introduce biannual review meetings to discuss progress, challenges, and areas for improvement within the network. Collect feedback from spoke institutions to refine integration strategies and ensure mutual benefits.

5. Seamless Communication Channels

Create a centralized portal for all network members to post announcements, events, and publications, ensuring timely updates and fostering a sense of community. Regularly schedule virtual or in-person meetings between researchers from hub and spoke institutions to share knowledge, discuss emerging trends, and solve common challenges.

Expected Scientific/Technical

1. Enhanced research output, evidenced by an increase in the number of high-impact Q1 and Q2 journal publications and conference presentations.
2. Development of new technologies, prototypes, and generating IP through patents resulting from collaborative projects.
3. Strengthening of interdisciplinary research programs addressing national and global challenges.
4. Establishment of a skilled research workforce through training, capacity building workshops, and mentorship.
5. Creating a repository of shared data and resources facilitates innovation and reduces duplication of efforts.
6. Enhanced visibility and reputation of spoke institutions through externally funded collaborative projects with hub institutions.
7. To significantly increase the number of research and development (R&D) projects initiated between hub and spoke institutions, driving collaboration innovation and addressing critical challenges.
8. New R&D-driven startups or spin-offs established based on innovations in healthcare, additive manufacturing, and energy.
9. Focused efforts for new projects with a greater societal impact through the adoption of low-cost healthcare technologies, renewable energy systems, and sustainable manufacturing processes.

Outcome anticipated :

1. Improved national rankings (e.g., NIRF) for spoke institutions due to increased research outputs, high-impact publications, patents, and collaborations with premier institutions.
2. Strengthening of academia-industry ties through translational research and the commercialization of technologies, aligning with national programs like "Make in India" and "Startup India."
3. Increased access to national and international funding opportunities for spoke institutions, leveraging their association with hub institutions and enhanced research capabilities.
4. Development of human capital, with researchers and students gaining advanced technical and problem-solving skills to address critical national and global challenges.
5. Enhanced global visibility for spoke institutions through collaborative projects, joint publications, and participation in international symposia, fostering new international partnerships.
6. Training programs for researchers from spoke institutions on Science communication to disseminate their research finding more effectively and widely including to the public.
7. Promotion of innovation and entrepreneurship through R&D-driven technology incubation, creating a pipeline of startups aligned with "Atmanirbhar Bharat."
8. Establishment of an interdisciplinary research culture across hub and spoke institutions, driving the creation of solutions for emerging fields such as artificial intelligence, green technologies, and materials science.
9. Strengthened resilience of spoke institutions to sustain and grow research capabilities, ensuring long-term contributions to India's scientific and industrial development.
10. Contribution to societal challenges such as clean energy, water conservation, waste management, and affordable healthcare, supporting "Unnat Bharat Abhiyan," "National Solar Mission," and "Swachh Bharat Mission."

Key Performance Indicators :

Measurable Impact on breakthrough research
Joint Publications
Joint Patents
Workshops/Conferences
Manpower Training
Other
R&D startups

Artificial Intelligence

Thematic Research Project

Design and Development of AI-Driven Multi-modal Privacy-Preserving Frameworks for Advancing Healthcare, Energy Systems, and Cybersecurity

Project Summary :

The project focuses on four AI frameworks: federated learning, multimodal learning, language models, and transfer learning. It develops a multimodal federated learning system for healthcare and energy, enabling public health assessments through speech impairments, behavioral monitoring, and cognitive health screening. Data from speech, audio, image, and video sources are analyzed to detect stuttering, apraxia, dysarthria, and cognitive impairments (CI), linked to conditions like Parkinson's, autism, ADHD, and Alzheimer's disease-related dementias (ADRD). Acoustic features from neuropsychological tests (e.g., MMSE, MoCA) and demographics are integrated with multimodal data to train AI models for ADRD detection. Advanced AI techniques, including large language models and multimodal deep learning, optimize federated learning for personalized care while preserving privacy and scalability. This accessible application empowers early CI and ADRD screening remotely. Next task aims to develop scalable, multimodal AI systems for diagnosing and managing diverse healthcare conditions, including mental health, cardiovascular diseases, keratoconus, rheumatoid arthritis, and chronic illnesses. Using advanced AI techniques such as LLMs, federated learning, and Explainable AI, the system integrates diverse data types (e.g., text, images, speech, and vitals) for accurate, non-invasive diagnostics. Privacy-preserving frameworks ensure data security while enabling real-time monitoring, predictive analytics, and personalized interventions. Key innovations include self-diagnostic kiosks for underserved regions, quantum AI models for advanced feature representation, and edge-compatible systems for resource efficiency. The initiative also addresses mental health in high-stress environments, providing real-time monitoring and early interventions to improve well-being. Designed for scalability and inclusivity, these AI-driven solutions aim to revolutionize healthcare accessibility and diagnostic precision. Next task leverages 3D genomics and multimodal language models (LLM/SLM) to study viral infections in India's diverse population, uncovering biomarkers and pathways for viral pathogenesis. It also explores Protein LLMs to enhance predictions for disease-related proteins and drug discovery. Key experiments include 3D genome mapping, LLM pretraining, and validation to advance precision diagnostics and therapeutics. The project enhances early cancer detection in resource-constrained areas like rural India by integrating AI with imaging and clinical data for affordable, scalable solutions. It also optimizes energy management and cybersecurity using digital twins, AI, and blockchain. It promotes sustainability through biomimicry-inspired solutions and decentralized energy trade, ensuring resilient, efficient, and secure global energy systems.

Keywords :

Multimodal learning, Federated Learning, Large & Small Language models, Transfer Learning, Green Cloud Computing, Cloud Task Scheduling

Objectives :

•Federated Learning Develop a federated learning framework integrating speech, audio, and image data for ADRD screening and optimize VM migration strategies for energy efficiency in multi-cloud environments, ensuring privacy through decentralized training.
•Multimodal Learning Develop multimodal AI framework for mental health and chronic disease insights, securely managing real-time data for electronic medical records and clinical support. The system leverages classical and quantum AI models for scalable, accurate diagnosis and treatment planning.
•Large and Small Language Leverage AI and genomic analysis to explore 3D genome organization and immune response mechanisms. AI models will identify biomarkers and develop precision medicine tools, with protein LLMs predicting protein function, mutation impacts, and drug interactions, supporting infection risk and disease progression prediction.
•Transfer Learning Collaborate with oncology centers to collect diverse cancer samples, annotate images, and develop robust CNN models, refining AI systems through clinical testing and multi-center trials.
•Digital Twin with AI for Energy To develop an integrated framework leveraging Digital Twins, AI, and ML for optimizing energy management and ensuring cybersecurity in power grid networks, promoting resilience, sustainability, and scalability.

Significance and impact of the proposed work :

•Federated Learning Develop scalable, privacy-preserving AI system using federated learning and multimodal data for early diagnosis and interventions, ensuring security with differential privacy and blockchain for transparency. •Multimodal Learning Create AI system for early detection, diagnostics, and cost-effective care, enhancing decision-making and rural access via Indic LLM-powered kiosks with minimal overhead. •Large and Small Language Leverage AI and 3D genomics to explore host-pathogen interactions and immune responses in India, identifying biomarkers, predicting risks, and guiding precision medicine strategies. •Transfer Learning Implement AI-based early cancer detection system to improve diagnostic accuracy and healthcare access in underserved areas. •Digital Twin with AI for Energy This work enhances energy efficiency, grid resilience, and cybersecurity, promotes renewable adoption, reduces costs providing scalable, sustainable solutions for secure smart cities and grids.

Output/Deliverables :

•Federated Learning Develop a multimodal federated learning framework for ADRD screening with speech, audio, image, and video data, energy-efficient VM migration, privacy techniques, and a web/mobile app for early interventions. •Multimodal Learning The work develops AI models for real-time vital monitoring, EMR maintenance, rural kiosks, and expert diagnosis, featuring privacy-preserving AI, research publications, and a prototype healthcare application. •Large and Small Language Deliver 3D genome maps, population-specific datasets, and biomarkers for infection risk and therapy. Protein LLMs enhance drug discovery and protein design. •Transfer Learning Deploy scalable AI diagnostic tool for cancer detection, validated through multi-center trials. •Digital Twin with AI for Energy Deliver an open-source Digital Twin platform for energy management, AI/ML models for cybersecurity, biomimicry systems, and a scalable framework for optimizing energy distribution and safeguarding power grids.

National Research Collaboration :

•Federated Learning IIT Kharagpur, NIT Sikkim, AIIMS Raipur, VY Hospital Raipur, JNMMC Raipur, NIT Suratkal, NIT Nagpur, NIT Manipur, NIT Warangal, IDRBT •Multimodal Learning Collaborating with Southern Railways Headquarters Hospital and Dr. Kumaresh Hospitals for intelligent patient monitoring and EMR systems, and with Sankara Netralaya on diabetic retinopathy models. DIMHANS supports clinical metadata collection, while IIIT Dharwad handles R&D and recording setup for mental health and neuroscience projects. •Large and Small Language Approaching IIT Hyderabad (Biotechnology: Computational Systems Biology) Dept. of CSE, Jadavpur University and MIU, Indian Statistical Institute, IIT Kharagpur

International Research Collaboration :

•Federated Learning Aalto University Finland, Tampere University Finland •Large and Small Language 4D Nucleome (4DN) Consortium, Laboratory of Functional and Structural Genomics, Centre of New Technologies, University of Warsaw, and UCL School of Pharmacy, UK and The Alan Turing Institute UK •Mutlimodal Learning Griffith University, University of South Australia, Worchester Polytechnic Institute, and Wuhan University to develop Explainable AI models for hospital and airport operations. •Transfer Learning Partnerships with local cancer research centers and hospitals. •Digital Twin with AI for Energy IIIT Dharwad has established collaborations with leading experts, including Dr. Salvatore Distefano, Professor at the Dipartimento di Scienze Matematiche e Informatiche, Scienze Fisiche e Scienze della Terra - MIFT University of Messina, Italy, and Dr. Prasad Calyam, Curators' Distinguished Professor and Greg L. Gilliom Professor of Cybersecurity at the University of Missouri – Columbia, USA, enhancing the research scope and expertise for the project.

Design and Development of AI-Driven Multi-modal Privacy-Preserving Frameworks for Advancing Healthcare, Energy Systems, and Cybersecurity

1. Origin of the Proposal:

The project seeks to revolutionize healthcare by addressing critical global and regional challenges through innovative AI-driven solutions. Leveraging cutting-edge technologies like federated learning, multimodal learning, large language models, and transfer learning, this framework enables secure, decentralized, and real-time diagnostics while maintaining patient privacy. It tackles diverse health issues, including early detection of cognitive impairments, stress management, chronic diseases, and emerging infections. By integrating multimodal data—speech, audio, imaging, and genomics—and employing advanced AI techniques, the project ensures accurate, cost-effective, and scalable healthcare solutions for underserved and diverse populations. With a focus on equitable healthcare access, this initiative is set to transform diagnostics, improve health outcomes, and promote long-term global health resilience. The more specific details of each technology is provided below :

- **Federated Learning**

This task addresses public health challenges by enabling early diagnosis of speech impairments, behavioral issues, and cognitive impairments (CI), including Alzheimer's disease-related dementia (ADRD). Leveraging artificial intelligence (AI), multimodal data, and federated learning (FL), it integrates speech, audio, image, and video analysis for real-time, privacy-preserving monitoring. FL ensures secure, decentralized analysis while maintaining patient data privacy. Advanced AI techniques like deep learning and large language models enhance diagnostic accuracy and personalized care. The system is designed to be accessible, cost-effective, and user-friendly, serving diverse populations, including underserved communities. This scalable framework promotes equitable healthcare and long-term health improvement. Federated Learning (FL) enables collaborative workload prediction in multi-cloud environments, ensuring privacy with differential privacy, blockchain for transparency, and encryption for data security. Advanced AI techniques like transformers, diffusion models, and GANs improve prediction accuracy and adapt to dynamic cloud workloads. FL also optimizes task offloading in hybrid edge-cloud setups, addressing IoT-driven demands and supporting green cloud computing.

- **Multimodal Learning**

Healthcare systems face challenges in managing conditions like mental health, cardiovascular diseases, keratoconus, diabetes, and rheumatoid arthritis, compounded by heterogeneous and siloed data. This proposal aims to integrate AI with multimodal data to transform diagnosis, treatment, and disease management. It utilizes advanced AI methods, such as large language models (LLMs) and AI-driven imaging techniques, for early detection and non-invasive cardiovascular diagnostics.

A key aspect of the project is developing a privacy-preserving framework using federated learning and privacy-preserving data mining (PPDM) to ensure patient data confidentiality. The system will integrate multiple vitals monitors with different display formats, reducing costs and enhancing interoperability. Additionally, multimodal AI will automate Electronic Medical Records (EMRs) through continuous data collection, improving diagnostic accuracy. Quantum AI models will be explored for better disease diagnosis, and the project will enable

[5] Ananda Kumar K, **Krishna Chaitanya A**, Satya Kumar V, Seungil Yoon, Ganesh Chandrasekaran, and Karthik Muralidhar, "Resource Allocation for Multicarrier Multicell NOMA-IBFD Cellular System with QoS," International conference on Signal Processing and Communications (SPCOM), Bangalore, 2024. DOI: 10.1109/SPCOM60851.2024.10631590

4.2 Roles/responsibilities of all the investigators of spoke institutions:
(Mention the role of each Investigator in implementing the objectives of the thematic research project)

H2 CI Engine Project
Dr. Kalyani Radha: PI
Dr. B Omprakash: Co-PI

Sl.No	Name of the Investigator and Institute Name	Roles/Responsibilities
Novel Materials (Electrode, electrolyte, separator) & Processes for Batteries (beyond Li-ion) and Supercapacitors including AI-ML based smart Battery Management system		
1.	Dr. Dubacharla Gyaneshwar, IIIT Raichur	Principal Investigator (PI) – responsible for data collection, signal, image, and video analysis, AI/ML/DL, embedded design optimization, energy optimization, and budget measurements.
2.	Prof. Dr. Harish Kumar Sardana, IIIT Raichur	Co-PI – responsible for overall design frameworks, evaluations, AI.
3.	Dr. Kiran Reddy, IIIT Raichur	Co-PI – responsible for signal processing, data collection, AI.
4.	Dr. Dilip Kumar Behara, JNTUA	Material synthesis, electrochemical analysis, prototype testing
5.	Dr. G. V. Subba Reddy, JNTUA	Material synthesis, and optimization of electrolytes, material electrochemical study, project management, industry collaboration
6.	Dr. Shobha Bindu, JNTUA	AI and ML approaches for the project
7.	Prof. G. Ravi Kiran Sastry, NITAP	Project oversight, design, methodological guidance, ensuring effective collaboration, and providing strategic direction.
8.	Dr. Santosh Kumar Behara, NITAP	Leading material development for Na-ion batteries, including electrode and solid electrolyte innovation.
9.	Dr. Srikanth Allamsetty, NITAP	Conducting experiments on the application of non-thermal plasma for surface treatment of electrodes.
10.	Dr. T. Karthikeya Sharma, NITAP	Conducting numerical simulations to analyze and optimize PCM-based thermal management system designs.
11.	Dr. Santhosh Kumar G, NITAP	Conducting experimental validations of the PCM-based system, focusing on performance testing and material applicability.

Budget Details

Institute Wise Budget Breakup :

Institute	Equipment	Research Personnel	Consumables	Travel	Contingency	Other Costs	Overhead	Total
Indian Institute of Technology Hyderabad (Hub Institution)	12,38,00,000	9,75,83,040	4,63,90,400	85,40,000	1,05,48,800	34,36,000	5,76,19,200	**34,79,17,440**
Central University of Andhra Pradesh (Spoke Institutions)	2,44,00,000	1,92,39,840	2,00,00,000	50,00,000	30,00,000	2,41,688	1,43,76,305	**8,62,57,833**
Indian Institute of Information and Technology, Raichur (Spoke Institutions)	2,77,80,000	4,79,43,360	62,50,000	57,00,000	59,00,000	2,41,689	1,87,63,009	**11,25,78,058**
Indian Institute of Information Technology Dharwad (Spoke Institutions)	2,28,40,000	3,50,87,040	64,80,000	58,75,000	26,50,000	2,41,688	1,46,34,745	**8,78,08,473**
Jawaharlal Nehru Technological University (Anantapur) (Spoke Institutions)	4,37,20,000	2,18,43,840	52,25,000	36,00,000	52,25,000	2,41,688	1,55,30,657	**9,53,86,185**
National Institute of Technology, Andhra Pradesh (Spoke Institutions)	4,77,00,000	4,45,35,840	1,11,88,000	75,68,400	51,88,000	2,41,689	2,28,26,081	**13,92,48,010**
National Institute of Technology Raipur (Spoke Institutions)	5,98,04,000	6,19,75,200	1,66,59,100	54,65,000	58,47,720	2,41,689	2,95,40,237	**17,95,32,946**
Pt. Ravishankar Shukla University (Spoke Institutions)	4,59,96,000	3,12,18,240	1,96,27,600	62,00,000	1,26,17,600	2,41,689	2,27,21,921	**13,86,23,050**
Total	**39,60,40,000**	**35,94,26,400**	**13,18,20,100**	**4,79,48,400**	**5,09,77,120**	**51,27,820**	**19,60,12,155**	**1,18,73,51,995**

Theme(s) Wise Budget Breakup :

Theme(s)	Equipment	Research Personnel	Consumables	Travel	Contingency	Other Costs	Overhead	Total
Advanced Materials	11,44,00,000	7,79,56,320	3,49,05,600	76,63,400	1,56,25,000	18,25,755	5,09,69,228	**30,33,45,303**
Artificial Intelligence	8,31,50,000	9,97,70,400	1,88,94,000	1,49,90,000	78,83,000	8,59,000	4,46,50,976	**27,01,97,376**
Energy technologies	11,08,10,000	8,68,69,440	3,31,80,500	1,20,20,000	1,58,46,720	8,59,000	5,00,83,916	**30,96,69,576**
Healthcare Technologies	8,76,80,000	9,48,30,240	4,48,40,000	1,32,75,000	1,16,22,400	15,84,065	5,03,08,035	**30,41,39,740**
Total	**39,60,40,000**	**35,94,26,400**	**13,18,20,100**	**4,79,48,400**	**5,09,77,120**	**51,27,820**	**19,60,12,155**	**1,18,73,51,995**

Hub Institution Total	347,917,440	**29.30 %**
All Spoke Institution Total	839,434,555	**70.70 %**

CV Hyperlink

Indian Institute of Technology Hyderabad

PI	Dr. Chandra Shekhar Sharma Indian Institute of Technology Hyderabad	Professor	View
Co-PI	Anand Rangan Indian Institute of Technology Hyderabad	Faculty	View
Co-PI	Arup Mahato Indian Institute of Technology Hyderabad	Assistant Professor	View
Co-PI	Deepu Babu Indian Institute of Technology Hyderabad	Assistant Professor	View
Co-PI	Falguni Pati Indian Institute of Technology Hyderabad	Associate Professor	View
Co-PI	Garikapati Sastry Indian Institute of Technology Hyderabad	Director	View
Co-PI	KISHALAY MITRA Indian Institute of Technology Hyderabad	Professor	View
Co-PI	Krishnakhilan C Indian Institute of Technology Hyderabad	Professor	View
Co-PI	Murthika Khandelwal Indian Institute of Technology Hyderabad	Associate professor	View
Co-PI	Nagarapan Ganapathy Indian Institute of Technology Hyderabad	Assistant Professor	View
Co-PI	Narendra Kurra Indian Institute of Technology Hyderabad	Assistant Professor	View
Co-PI	Neeraj Kumar Indian Institute of Technology Hyderabad	Assistant Professor	View
Co-PI	Pradeep Yarlagadda Indian Institute of Technology Hyderabad	Associate Professor	View
Co-PI	Rupesh Wandhare Indian Institute of Technology Hyderabad	Associate Professor	View
Co-PI	Sakar Kothare Indian Institute of Technology Hyderabad	Professor	View
Co-PI	Sandipan Ray Indian Institute of Technology Hyderabad	Assistant Professor Grade I	View
Co-PI	sayak banerjee Indian Institute of Technology Hyderabad	Assistant Professor	View
Co-PI	Shourya DeBadyate Indian Institute of Technology Hyderabad	Assistant Professor	View
Co-PI	Srijith P.K. Indian Institute of Technology Hyderabad	Associate Professor	View
Co-PI	Suhash Dey Indian Institute of Technology Hyderabad	Professor	View
Co-PI	Sumohana Channappayya Indian Institute of Technology Hyderabad	Professor	View
Co-PI	Surendra Marika Indian Institute of Technology Hyderabad	Associate Professor	View
Co-PI	Suresh Garlapati Indian Institute of Technology Hyderabad	Assistant Professor	View
Co-PI	Yogesh Srivastava Indian Institute of Technology Hyderabad	Assistant Professor	View

Jawaharlal Nehru Technological University (Anantapur)

Co-PI	Satyanarayana Nagaraju Jawaharlal Nehru Technological University (Anantapur)	Professor	View
Co-PI	B PRAKASH Jawaharlal Nehru Technological University (Anantapur)	Assistant Professor	View
Co-PI	B Reddy Jawaharlal Nehru Technological University (Anantapur)	Professor	View
Co-PI	Dilip Behera Jawaharlal Nehru Technological University (Anantapur)	Assistant Professor	View
Co-PI	Kadasubatla Radha Jawaharlal Nehru Technological University (Anantapur)	Associate PROFESSOR	View
Co-PI	Kalluru Wahesewarma Jawaharlal Nehru Technological University (Anantapur)	Assistant Professor	View
Co-PI	K KIRANMAYI Jawaharlal Nehru Technological University (Anantapur)	Professor	View
Co-PI	Renigunta Suseela Jawaharlal Nehru Technological University (Anantapur)	PROFESSOR	View
Co-PI	Shaikhasamirjaji Jawaharlal Nehru Technological University (Anantapur)	ASSISTANT PROFESSOR	View
Co-PI	Shoba Chiparapalle Jawaharlal Nehru Technological University (Anantapur)	Professor	View
Co-PI	Venkatasubba Gopireddy Jawaharlal Nehru Technological University (Anantapur)	Assistant Professor	View

PK Rajshahar Shuka University

PI	Manas Deb PK Rajshahar Shuka University	Professor	View
Co-PI	Deepanda Singh PK Rajshahar Shuka University	Assistant Professor	View
Co-PI	DURGA BISEN PK Rajshahar Shuka University	Assistant Professor	View
Co-PI	Indrapal Karhkal PK Rajshahar Shuka University	Assistant Professor	View
Co-PI	Kamlesh Shilpa PK Rajshahar Shuka University	Professor	View
Co-PI	Kirahan Sahu PK Rajshahar Shuka University	Professor	View
Co-PI	Manju Singh PK Rajshahar Shuka University	Associate Professor	View
Co-PI	Manmohan Satnami PK Rajshahar Shuka University	Assistant Professor	View
Co-PI	NABEETA BRAHME PK Rajshahar Shuka University	Professor And Head	View
Co-PI	YUGAL MANIPAL PK Rajshahar Shuka University	ASSISTANT PROFESSOR	View

National Institute of Technology Raipur

PI	Manoranjita Tripathi National Institute of Technology Raipur	Assistant Professor	View
Co-PI	Aakanksha Sharaff National Institute of Technology Raipur	Assistant Professor Grade I	View
Co-PI	Ajay Raghuvanshi National Institute of Technology Raipur	Associate Professor	View
Co-PI	Anamika Yadav National Institute of Technology Raipur	Professor	View
Co-PI	Anandkumar Jayapal National Institute of Technology Raipur	Associate Professor	View
Co-PI	Arindam Biswas National Institute of Technology Raipur	Assistant Professor	View
Co-PI	Ashish Kumar National Institute of Technology Raipur	Assistant Professor	View
Co-PI	Ayush Khare National Institute of Technology Raipur	Associate Professor	View
Co-PI	Bhanjan Anne National Institute of Technology Raipur	Assistant Professor	View
Co-PI	Bibhudendra Acharya National Institute of Technology Raipur	Associate Professor	View
Co-PI	Chandrashekar jatoth National Institute of Technology Raipur	Assistant Professor	View
Co-PI	Debaraj Muchahary National Institute of Technology Raipur	Assistant Professor	View
Co-PI	Deepak Singh National Institute of Technology Raipur	Assistant Professor	View
Co-PI	Dhaon Pal National Institute of Technology Raipur	Associate Professor	View
Co-PI	Dipendra Roy National Institute of Technology Raipur	Assistant Professor Senior Gerde	View
Co-PI	Dilip Sisodia National Institute of Technology Raipur	Associate Professor	View
Co-PI	Guru Mishra National Institute of Technology Raipur	Associate Proffesor	View
Co-PI	Jitendra Rout National Institute of Technology Raipur	Assistant Professor I	View
Co-PI	Mahendra Gaikwad National Institute of Technology Raipur	Assistant Professor	View
Co-PI	Manish Bawa National Institute of Technology Raipur	Assistant Professor	View
Co-PI	Manimaran Ramachandran National Institute of Technology Raipur	Associate Professor	View
Co-PI	Manoj Chopkar National Institute of Technology Raipur	Associate Professor	View
Co-PI	Manu Vardhan National Institute of Technology Raipur	ASSISTANT PROFESSOR	View
Co-PI	Meenakha Bharat National Institute of Technology Raipur	Assistant Professor	View
Co-PI	NAGASRUTHI NEELAM National Institute of Technology Raipur	Assistant Professor	View
Co-PI	Narendra Lenjiya National Institute of Technology Raipur	Associate Professor	View
Co-PI	NENA GUPTA National Institute of Technology Raipur	ASSISTANT PROFESSOR	View
Co-PI	NeyaNVKrishna S National Institute of Technology Raipur	Associate Professor	View
Co-PI	Raj Sahu National Institute of Technology Raipur	Assistant Professor	View
Co-PI	Sachin Jain National Institute of Technology Raipur	Assistant Professor	View
Co-PI	Sanjeev Kumar National Institute of Technology Raipur	Assistant Professor	View
Co-PI	Sharda Bharti National Institute of Technology Raipur	Assistant Professor	View
Co-PI	Srinivasu Gangineni National Institute of Technology Raipur	Assistant Professor	View
Co-PI	Subhas Ganguly National Institute of Technology Raipur	Associate Professor	View
Co-PI	Sudip Sinha National Institute of Technology Raipur	Assistant professor	View
Co-PI	Suraj Mukti National Institute of Technology Raipur	Associate Professor	View
Co-PI	Surendra Rao National Institute of Technology Raipur	Assistant Professor	View
Co-PI	Tirath Sahu National Institute of Technology Raipur	Assistant Professor	View
Co-PI	Tushankit Meenpal National Institute of Technology Raipur	Assistant Professor	View
Co-PI	TUMKAPATI NAVAKRAN National Institute of Technology Raipur	ASSOCIATE PROFESSOR	View
Co-PI	Venkata Nidagunta National Institute of Technology Raipur	Professor	View
Co-PI	Venu Sonti National Institute of Technology Raipur	Assistant Professor	View
Co-PI	Vivek Gabe National Institute of Technology Raipur	Assistant Professor	View

National Institute of Technology, Andhra Pradesh

PI	Sandeep Vuppala National Institute of Technology, Andhra Pradesh	Assistant Professor	View
Co-PI	Amarendar M National Institute of Technology, Andhra Pradesh	Assistant Professor	View
Co-PI	Dr. T. Sharma National Institute of Technology, Andhra Pradesh	Assistant Professor	View
Co-PI	HIMABINDU Kommareddi National Institute of Technology, Andhra Pradesh	Assistant Professor	View
Co-PI	Jyothirmayee Kondamudi National Institute of Technology, Andhra Pradesh	Assistant Professor	View
Co-PI	Karthick Seshadri National Institute of Technology, Andhra Pradesh	Assistant Professor Grade II	View
Co-PI	Kiran Tangeda National Institute of Technology, Andhra Pradesh	Assistant Professor	View
Co-PI	Krishna A National Institute of Technology, Andhra Pradesh	Assistant Professor	View
Co-PI	Nagesh Sristy National Institute of Technology, Andhra Pradesh	Assistant Professor	View
Co-PI	Narasimha Banaseshu National Institute of Technology, Andhra Pradesh	Assistant Professor	View
Co-PI	Pachalapalli Reddy National Institute of Technology, Andhra Pradesh	Associate Professor	View
Co-PI	Rafi Muhammad National Institute of Technology, Andhra Pradesh	Assistant Professor	View
Co-PI	Ramulu Wachenrapu National Institute of Technology, Andhra Pradesh	Assistant Professor	View
Co-PI	Rauthkoan D National Institute of Technology, Andhra Pradesh	Professor	View
Co-PI	Sarkar Prabhajeet National Institute of Technology, Andhra Pradesh	Assistant Professor	View
Co-PI	Santhosh Gogulothu National Institute of Technology, Andhra Pradesh	Assistant Professor	View
Co-PI	Santosh Behara National Institute of Technology, Andhra Pradesh	Assistant/Professor	View
Co-PI	Seenivasan Ayothiraman National Institute of Technology, Andhra Pradesh	Assistant Professor	View
Co-PI	Srikanth Alamsetty National Institute of Technology, Andhra Pradesh	Assistant Professor	View
Co-PI	Srilatha Chebrolu National Institute of Technology, Andhra Pradesh	Assistant Professor	View
Co-PI	Sriramkrishna Karri National Institute of Technology, Andhra Pradesh	Assistant Professor	View
Co-PI	Subrahmanyam Vilaphumar National Institute of Technology, Andhra Pradesh	Assistant Professor	View
Co-PI	SUNIL RAJULAPATI National Institute of Technology, Andhra Pradesh	Assistant Professor	View
Co-PI	SURENDRA MAHADEVIGOWDA National Institute of Technology, Andhra Pradesh	Assistant Professor	View
Co-PI	Tejasvitha Ramesh National Institute of Technology, Andhra Pradesh	Assistant Professor	View
Co-PI	Thella Rao National Institute of Technology, Andhra Pradesh	Assistant Professor	View
Co-PI	Venkata GB National Institute of Technology, Andhra Pradesh	Assistant Professor	View
Co-PI	Vinodh R National Institute of Technology, Andhra Pradesh	Assistant Professor	View

Indian Institute of Information Technology Dharwad

PI	Deepak T Indian Institute of Information Technology Dharwad	Assistant Professor	View
Co-PI	Aneesh Harumanthanapuja Indian Institute of Information Technology Dharwad	Assistant Professor	View
Co-PI	Chinnayarenda A Indian Institute of Information Technology Dharwad	Assistant Professor	View
Co-PI	Girish DN Indian Institute of Information Technology Dharwad	Assistant Professor	View
Co-PI	K Nalanaj Indian Institute of Information Technology Dharwad	Assistant Professor	View
Co-PI	Pankaj Kumar Indian Institute of Information Technology Dharwad	Assistant Professor	View
Co-PI	Pawan C Indian Institute of Information Technology Dharwad	Assistant Professor	View
Co-PI	Sibasankar Padhy Indian Institute of Information Technology Dharwad	Assistant Professor	View
Co-PI	Siddharth R Indian Institute of Information Technology Dharwad	Assistant Professor	View
Co-PI	Sunil K Indian Institute of Information Technology Dharwad	Assistant Professor	View
Co-PI	SUNIL SAUNYA Indian Institute of Information Technology Dharwad	ASSISTANT PROFESSOR	View
Co-PI	Vinaloy A Indian Institute of Information Technology Dharwad	Assistant Professor	View

Central University of Andhra Pradesh

PI	Babu G Central University of Andhra Pradesh	Associate Professor and Associate Dean	View
Co-PI	C Krishnaiiya Central University of Andhra Pradesh	Assistant Professor	View
Co-PI	P Somaiiahu Central University of Andhra Pradesh	Assistant Professor	View
Co-PI	TAOTA SAHA Central University of Andhra Pradesh	Assistant Professor T C	View
Co-PI	VINOO FATA Central University of Andhra Pradesh	Assistant Professor	View

Indian Institute of Information and Technology, Raichur

Co-PI	Dubachartla Gyaneshwar Indian Institute of Information and Technology, Raichur	Assistant Professor	View
Co-PI	ANUP HALDER Indian Institute of Information and Technology, Raichur	Assistant Professor	View
Co-PI	Bharat Soni Indian Institute of Information and Technology, Raichur	Assistant Professor	View
Co-PI	Debmalya Sain Indian Institute of Information and Technology, Raichur	Assistant Professor	View
Co-PI	Harish Sankana Indian Institute of Information and Technology, Raichur	Professor and Director	View
Co-PI	Jahnavi Tiwari Indian Institute of Information and Technology, Raichur	Assistant Professor	View
Co-PI	M Reddy Indian Institute of Information and Technology, Raichur	Assistant Professor	View
Co-PI	Nabin Meher Indian Institute of Information and Technology, Raichur	Assistant Professor	View
Co-PI	Nainsha V Indian Institute of Information and Technology, Raichur	Assistant Professor	View
Co-PI	Neha Agarwal Indian Institute of Information and Technology, Raichur	Assistant Professor	View
Co-PI	Pradyut Pradhan Indian Institute of Information and Technology, Raichur	Assistant Professor - Senior Scale	View
Co-PI	PRIYANKA SINGH Indian Institute of Information and Technology, Raichur	Assistant Professor	View
Co-PI	RAMESH DILLI Indian Institute of Information and Technology, Raichur	Assistant Professor	View

Acknowledgement of Submitted Project Proposal & Reference File No.

1 message

<pmso.dst@nic.in>
To: eswar.cse@jntua.ac.in

Tue, 11 Feb, 2025 at 11:49 am

Department of Science & Technology

Subject: Acknowledgement of Submitted Project Proposal & Reference File No.

Dear Dr. Bodi Reddy Eswara Reddy

Electronic Project Management System

onlinedst.gov.in | Email: pmso.dst@nic.in

This refers to the project proposal entitled **Webometrics and Altmetrics-Driven Analysis of India's Technovation Ecosystem STI Interventions and Target Setting for Globalization, Economic Growth, and Viksit Bharat 2047** submitted by you for financial support to this Department.

Please note the File Number: **DST/NSTMIS/2025/673** for future reference

This Project Proposal will be considered under **National Science and Technology Management Information System** Division and **NSTMIS** Scheme which is being handled by the following officer:

Programme Officer : Mr. PRAMOD KUMAR ARYA , Scientist - 'C', Email Id: pk.arya@nic.in

Please mention the above FILE NUMBER and TITLE OF THE PROJECT PROPOSAL in all future correspondences with DST. You can access this Project Proposal account at **onlinedst.gov.in** using the Principal Investigator (PI) username and password.

Regards
Administrator
e-PMS

This is an auto generated mail. Please do not reply

This is an autogenerated mail from e-PMS

ANDHRA PRADESH STATE COUNCIL OF HIGHER EDUCATION
(A Statutory Body of the Government of A.P)
3rd, 4th and 5th floors, Neeladri Towers, 6th Battalion Road,
Atmakur(V), Mangalagiri(M), Guntur-522 503, Andhra Pradesh
Web: www.apsche.org, **Email:** secretary@apsche.org

PROF.Y.NAZEER AHAMMED
SECRETARY

Lr.No.APSCHE/APHEPB/Research Proposals/2023 Date: 25.05.2024

To
Dr.M.Naresh Babu
Department of Computer Science and Engineering
Associate Professor
Indian Institute of Information Technology Design and Manufacturing
Kurnool

Sub: Sanction Letter for the Research proposal titled ***"DeepDroughtUAV: Deep learning based estimation of drought area in the Anantapur Cluster using UAV Surveillance".***

***

Andhra Pradesh State Council of Higher Education, on the recommendations of the expert committee constituted, has selected your Research proposals to get financial support of Rs. 10 Lakh from APSCHE.

In light of the above, I am happy to inform you that the research proposal titled ***"DeepDroughtUAV: Deep learning based estimation of drought area in the Anantapur Cluster using UAV Surveillance"*** submitted by the Principal Investigator(PI) Dr.M.Naresh Babu, Department of Computer Science and Engineering, IIITDM, Kurnool, Prof.C.Shoba Bindu, Department of Computer Science and Engineering, JNTU Ananatapur, Dr.S.Balasubramanian, Department of Mathematics & Computer Science, Sri Satya Sai Institute of Higher Learning, Anantapurhas been selected to get financial support of Rs.10 lakh (Rupees Ten Lakh only) by the Andhra Pradesh State Council of Higher Education (APSCHE). The sanctioned amount shall be spent as follows;

S.No	Description	Unit Price in Rs	Quantity	Total Price in Rs
1	Weather & Climate Monitor (Drones)	1,20,000	02	2,40,000
2	Software - Agisoft	$180	01	15,000
3	Project Assistant-1No	25,000	22 months	5,50,000
4	Research Interns – for 2 Months	5,000	6	60,000
5	Consumables - Sensors	30,000	1	30,000
6	Contingencies	45,000	1	45,000
7	Travel	60,000	1	60,000
Total				**10,00,000**

As per the terms and conditions outlined in the guidelines for submitting research proposals, we are hereby sanctioning financial support of Rs. 10 lakhs and the funding will be disbursed in instalments as per below;

	Period of fund allotment	**Amount in Rs.**
On Project allotment	Day of amount sanctioned	5 Lakh
1st Review	12th Month	2.5 Lakh
2nd Review	22nd Month	2.0 Lakh
Final Submission	24th Month	50000/-
Total		**1000000/-**

Please note that the funds will be disbursed subject to the achievement of project milestones and submission of satisfactory progress reports. Additionally, the equipment available in member institutions of the cluster should be utilized to optimize project resources.

The terms & conditions and ECS mandate forms are herewith enclosed.

T. Nazeer Ahmed
25/5/24
SECRETARY

Copy to
Registrar, IIITDM, Kurnool
Registrar, JNTU, Anantapur
Registrar, Sri Satya Sai Institute of Higher Learning, Anantapur
Co-Principal Investigators

ALL INDIA COUNCIL FOR TECHNICAL EDUCATION
Nelson Mandela Marg, Vasant Kunj,
New Delhi-110070

RPS - Sanction Letter

File No. 8-82/FDC/RPS (POLICY-1) /2019-20 **Date: 14 Aug 2020**

The Drawing and Disbursing Officer
All India Council for Technical Education
Nelson Mandela Marg,
Vasant Kunj, New Delhi-110070,

Sub: Release of a sum of Rs.1125990/- being the 1st installment of the total grant of Rs.1143137/- for conduct of Project under Research Promotion Scheme (RPS) during the financial year 2020-21.

Sir,

With reference to the proposal submitted by the institute, this is to convey the sanction of the Council for payment of **Rs.1125990/- (Rupees Eleven Lakh Twenty Five Thousand Nine Hundred Ninety Only)** as 1st installment out of a total approved grant-in-aid of **Rs.1143137/-** for conduct of a Project under the Research Promotion Scheme (RPS), as per details given below:-

I.	Name and address of the Beneficiary Institution (University / College / Institution)	:	**Registrar / Director / Principal, JNTUA College of Engineering, Anantapur, Andhra Pradesh-515002**
II.	Principal Investigator's Name & Dept./Course	:	**Dr. Chenna Reddy P (Computer/IT Engineering)**
III.	Grant-in-aid Sanctioned	:	**Rs.1143137/-** (Rs. 971666/- for non-recurring and Rs.171471 /- for recurring expenditure)
IV.	**Amount to be Released during the year 2019-20 (as 1st installment)**	:	**Rs.1125990 /-** (Rs. 971666/- Full amount of non-recurring & Rs.154324/- 90 % of recurring sanctioned)
V.	Project Duration	:	**3 Years**
VI.	Title of the Project	:	**Creating Virtual University Environment**

I. Release of funds:

1. The amount of the grant shall be drawn by the Drawing and Disbursing Officer (DDO), All India Council for Technical Education, New Delhi on the Grants-in-aid bill and shall be disbursed to and credited to the account of JNTUA College of Engineering, Anantapur, Andhra Pradesh-515002 through **RTGS/PMFS**.
2. The sanctioned grant-in-aid is debitable to the **Major Head "601.12.a (RPS Plan)" Gen.** and is valid for payment during the financial year 2020-21.
3. The sanction issues in exercise of the powers delegated to the Council. It is also certified that grant-in-aid is being released in conformity with the rules and principles of the Scheme.
4. The grant-in-aid is being released in conformity with the Terms & Conditions as well as norms of the scheme as already communicated and also being communicated in this letter.

II. Maintenance of account by the Institute/PI:

1. Funds covered by this grant shall be kept separately and would not be mixed up with other funds so as to know the amount of interest accrued on the grant.
2. The grant is intended to cover items of expenditure/equipment approved by AICTE.
3. Acknowledgement of receipt of grant and letter of acceptance of terms and conditions is to be submitted to AICTE within 15 days from the receipt of the grant to the following address:

   Director (Faculty Development Cell), AICTE, Nelson Mandela Marg, Vasant Kunj, New Delhi-110070

Contd...2/-

4. The accounts of the grantee will be opened for test check by the Council or Comptroller & Auditor General of India or by any officer designated by them.

5. The Principal and PI of the institute are requested to verify the correctness of the undermentioned bank account/RTGS/**PFMS** details submitted by them alongwith the Proposal, in which the grant is being released. In case of any omission, the same should be reported to AICTE immediately along with refund of entire grant: -

Institute Pan No.	Bank Name	Bank Branch	Bank Branch Add.	Account Holder Name	Account Type	Account Number	IFSC Code
AAALP1163D	State Bank of India	JNTUEC	SIR M.V. Road, Anantapur-515002	Principal	Current Account	10428782192	SBIN0002723

6. The grantee Institution shall observe all financial norms and guidelines as prescribed by the AICTE/Government of India from time to time. Grantee institution must follow GFR guidelines in procuring the sanctioned items and maintain an audited record of assets acquired wholly or substantially out of the grant-in-aid and a register for assets shall be maintained by the Institute in the prescribed form i.e. GFR-19.

7. **Interest accrued on the sanctioned grant-in-aid will be reported and refunded to AICTE and not adjusted against the subsequent installment.**

III. General Instructions:

1. It should be ensured that no RPS project in favour of the same P.I. has been sanctioned during the last 03 years before utilizing this amount and the matter be brought to the notice of this Council immediately in case a faculty is sanctioned multiple RPS Projects.

2. The duration of Project is 03 years and the **date of release of the grant by AICTE shall be taken as the date of commencement of the project**. The **Registrar/Director/Principal** shall intimate about the receipt of the grant to AICTE. Any Expenditure, incurred prior to issuance of this Sanction Order, would not allowed to be adjusted in the grant and if the University/Institution do not take-up the project work **within 6 months** of the receipt of the grant, approval shall *ipso facto* lapse **and the Institute has to necessarily refund the entire grant to AICTE along with interest within a month. In case the grant is not refunded within said duration 18% interest will be levied on it.** The grant has to be refunded to AICTE, through RTGS as per details given below:

Account Number	**55113199952**
Name of the Account Holder	**Member Secretary, AICTE, New Delhi**
Bank Name	**State Bank of India**
Branch Name	**Shashtri Bhawan, New Delhi**
IFSC Code	**SBIN0050203**

3. The Institute may constitute a Project Monitoring Committee (PMC). The composition of the PMC shall be as under:
   i. Principal/Director of the institution (Chairperson)
   ii. Two HODs from institute (Members)
   iii. In case of private institute one subject expert from government institute, not below the rank of Associate Professor (Member)
   iv. Coordinator of the project (Member Secretary)

4. The grant shall be utilized strictly for the purpose as specified in the sanction letter. Re-appropriation of funds from one Head to another is strictly not permitted viz. Recurring and non-recurring Heads. Further, the equipment(s)/item(s) purchased should be as per the specifications and individual item-wise costs sanctioned by AICTE, and not taking the total grant sanctioned as one entity. Item-wise purchase cost shall be matched with the sanctioned cost, and the cost of item purchased below the sanction cost shall be restricted as actual cost. If the item purchase cost is higher than its sanctioned cost, the cost shall be restricted to the sanctioned cost and the additional amount shall be met by the Institute from its own resources.

5. Similarly, the recurring grant shall be used for the items sanctioned by the AICTE. No money be used for going abroad to attend Conference / seminars. However, for presenting a Paper in a Seminar / Conference **within the country,** the travel expenses may be met from the recurring grant.

Contd...3/-

6. No request for additional grant over and above the sanctioned grant shall be considered by the AICTE. The additional amount, if any, expended beyond the sanctioned grant shall be met by the Institute from its own resources.

7. The institute/University shall not charge any overheads on this Project and will provide all the administrative support **and timely release of grant to PI** for completion of the Project.

8. The grantee shall utilize grants only on approved items as per list of equipment attached. However, if the grantee wishes to recast the Project, approval of Council must be obtained for the revised item of expenditure and they will maintain proper accounts of the expenditure as per the norms/procedures of AICTE/Government of India. **The revised proposal should be within the total grant sanctioned and duly supported with reasons and recommendations of the Project Monitoring Committee (PMC).**

9. The assets acquired wholly or substantially out of All India Council for Technical Education's grant shall not be disposed or encumbered or utilized for the purpose other than those for which the Grant was given without proper sanction of the All India Council for Technical Education.

10. Each project sanctioned by AICTE is assigned a specific Reference Number, which is given on pre-page. All correspondence address to AICTE regarding the project must quote this number alongwith year of sanction of the project, otherwise correspondence may not be entertained.

11. The grantee shall follow the terms and conditions of Research Promotion Scheme (RPS) as laid down by the Council from time to time.

IV. Submission of documents by the institute/PI to AICTE:

A. Documents to be submitted within one month of completion of each financial year:

i. Annual Progress Report, indicating therein the number of patents, publications or any other achievement.

ii. Utilization Certificate, Audited Utilization Certificate, Receipt & Payments, Statement of Expenditure.

iii. Audited record of assets acquired wholly or substantially out of the grant-in-aid and a register for assets in the prescribed form i.e. GFR-19.

iv. Separate Bills/vouchers related to Non-recurring and recurring expenditures duly signed & stamped by the PI & Head of the institution.

v. Stock entry register duly verified by the Store-in-charge and PI & counter signed by Head of institution.

B. Documents to be submitted within two month of completion of the Project:

i. The consolidated Utilization Certificate (UC) and Receipt & Payment Account for the Project duration, duly audited.

ii. Consolidated audited statement of expenditure, to the effect that the grant has been utilized for the purpose for which it has been sanctioned. It should contain the head-wise break up of expenditure made from the grant-in-aid provided by the Council.

iii. Project Completion Report duly signed & stamped by the PI & Head of the institution and Project Evaluation Committee (PEC) Members.

iv. Principal Investigator/institute to submit the Feed Back Form in AICTE format.

v. The prescribed formats for submission of necessary mandatory documents and Terms & Conditions may please be downloaded from **www.aicte-india.org/schemes/research-innovations-development-schemes.**

Note: Any deviation from the above said time schedule will cause serious action against the institute.

Contd.....4/-

Approved list of items under Non-recurring grant:

S. No.	Approved Item (As per proposal)	No. of Units	Amount recommended
A.	Non-recurring		
i)	Oculuss Head mounted Display All-in-one VR And Oculus Touch Controllers	1	
ii)	HTC Vive Pro VR Headset Kit	1	
iii)	Samsung Gear VR Compatible with Galaxy Note9*, S9, S9+, Note8, S8, S8+, S7, S7 edge, Note5, S6 edge+, S6, S6 edge, A8 Star, A8, A8+	1	Rs.971666/-
iv)	Samsung Phone	1	
v)	Google Cardboards	15	
vi)	Desktop Computers	2	
Vii)	Laptop Computers	2	
viii)	3D Projector	1	
ix)	3-D Printer	1	
x)	Hand tracking motion sensors	4	
B.	Recurring (i.e. 90% of total approved recurring grant) for Contingencies & Consumables only		Rs.154324/-
	Grand Total (A)+(B)		Rs.1125990/-

1. Registrar/Director/Principal,
JNTUA College of Engineering,
Anantapur, Andhra Pradesh-515002

2. Name of Principal Investigator,
Dr. Chenna Reddy P,
JNTUA College of Engineering,
Anantapur, Andhra Pradesh-515002

3. Office of Director General of Audit
General Revenues, AGCR Building
I.P. Estate, New Delhi-110002.

4. Guard File

(Col. B. Venkat)
Director (FDC)

21 AUG 2020