



**PROGRAM REPORT**  
of  
**ATAL SPONSORED**  
**FACULTY DEVELOPMENT PROGRAM**  
On  
**Emerging Technologies in Drone Design  
and Development**

**Date: 5<sup>th</sup> Feb to 10<sup>th</sup> Feb 2024**

**Organized by**

Aeronautical Engineering

ACS College of Engineering, Bangalore

**FDP Coordinators**

Dr.G.Ramanan & Dr Inamul Hasan  
Associate Professor  
Aeronautical Engineering,  
ACS College of Engineering

# ATAL FDP- Emerging Technologies in Drone Design and Development

**Date: 5<sup>th</sup> Feb to 10<sup>th</sup> Feb 2024**

6-Days AICTE sponsored Faculty Development Programme on Emerging Technologies in Drone Design and Development was conducted from 5<sup>th</sup> to 10<sup>th</sup> February, 2024 in which around 50 participants from different parts of the country were participated.

## The resource persons of the 6 days programme

### Dr.S.N. Omkar, Professor & Chief Research Scientist, IISc Bangalore



Chief Research Scientist, Department of Aerospace Engineering, Indian Institute of Science

**Chairperson:** Standardization of Drones Committee by the Bureau of Indian Standards

**Convenor:** Standardization of Agricultural Drones Special Committee by the Bureau of Indian Standards

**Chair** of Center for Advanced Air Mobility

Dr. S. N. Omkar's research interests include Satellite image processing, Uninhabited Air Vehicles (UAV), Drone Computing, Nature-inspired algorithms, Biomechanics and Yoga.

He is also pursuing several projects and research work in the area of Satellite and UAV image processing; Flood and Disaster Management; and Yoga

### Prof.P.Soma, Former Group Director, ISTRAC, ISRO



- Professor-Aeronautical Engineering, ACSCE
  - Scientist/Engineer "H", Deputy Director, Navigation Systems Area
  - Project Director, SATNAV Programme, Ground Networks
  - Secretariat Member: International Charter 'Space and Major Disasters'
  - Project Director: Ground segment for GAGAN/IRNSS Navigation systems. Software for TTC ground network planning and error analysis
  - Software for preliminary orbit determination for Space objects.
- He worked in ISTRAC for Evolving and establishing Mission Operations and Health System for Satellites and Spacecraft operations of IRS/LEO missions Establishment of satellite aided search and Rescue Facilities.

## Dr. Ashok G Matani, Professor (Retd), Govt College, Jalgaon



Professor [Retired], Govt. College of Engineering, Jalgaon  
Published more than 85 papers in SCOPUS/ Web of Science / UGC CARE indexed Journals. Presented more than 121 numbers of research / technical papers. 1 patent awarded by Govt. of Australia; 01 patent awarded by Govt. of Germany, 02 patents granted by IPO India + 05 patents have been accepted for publication on IPO  
Delivered more than 121 expert lectures in various STTPs /FDPs sponsored by AICTE / UGC/ ISTE / TEQIP / Govt. of Maharashtra / Govt. of India schemes  
Delivered 64 keynote / invited lectures in various conferences / seminars organized in IITs / NITs / CGFIs/ institutes of national importance

## Dr Ramesh Kestur, Professor, International Institute of Information Technology, Bangalore



**Dr Ramesh Kestur** has 17 years of experience at Infosys Technologies Ltd, India's premier IT firm. He served as the Group Project Manager at the Product Engineering division of Infosys. In his doctoral research, he collaborated with the Department of Aerospace engineering at IISc, Bangalore for the drone experiments and flight campaigns. In agritech, he has applied machine learning in analysis of aerial imagery acquired by remote sensing from Unmanned Aerial Systems (UAS), also known as Low Altitude Remote Sensing (LARS). He is a reviewer of several SCI Scopus indexed journals in the domain of remote sensing and machine learning. In healthcare, his interests are in Computational Neuropathology.

## Dr. Thangadurai N, Dean- Innovation, Projects and Strategy, RajaRajeswari Group of Institutions, Bangalore



**Dr. Thangadurai. N** is working as a Professor & Dean-Innovation, Projects and Strategy, RajaRajeswari Group of Institutions, Bangalore. He has more 2 decades of experience in Academics, Research and Administration. He has authored/co-authored more than 180 research papers in both International and National Journals and Conferences. He has supervised 64 numbers of undergraduate and postgraduate students for their project completion and guiding 6 Ph.D. scholars now. 6 research scholars have been awarded for their Ph.D. under his guidance. He has received sponsored research project grant from VGST, ISRO, MSME, DST and AICTE.

**Mr. Rajashekharareddy H G, Technical Expert at Gopalan Aerospace India Pvt Ltd, Bangalore**



Mr. Rajashekharareddy H G completed his UG in Aeronautical Engineering and PG in Aerospace Propulsion from VTU, Belagavi, Karnataka. Pursuing PhD in Drone Technology at Dayananda Sagar University in Bangalore. He has a pivotal role as a Technical Expert at Gopalan Aerospace India Pvt Ltd, Bangalore. Also, he is working as an independent consultant for several prominent organizations, including Krushaka Unmanned and Aerial Solutions Pvt Ltd, Bangalore, Telegence Powercomm Pvt Ltd, Gujarat, IIT Mandi iHub & HCI Foundation, Himachal Pradesh, and Elcomponics Aerob Tech India Pvt Ltd, Uttar Pradesh.

**Mr. C.AASISH, Drone Operations Head- Orient Flights Aviation Academy**



Drone Operations Head 1/06/2020 – Present  
Hindustan Group of Institutions and Orient Flights Aviation Academy He worked for UAV Research and development; aerial photography, 3d mapping, RPAS Pilot  
SAE India Southern Section (SAEISS) Autonomous Drone Development Competition Champion (ADDC) 2022- present  
Participated in Mission 7 International Aerial robotics Competition, BeihangUniversity, China,2018.  
Achieved “Best Man machine Interaction Award”, International Aerial RoboticsCompetition (IARC), Kunming China, 2019  
Achieved 9 th place in SAE Aero design Micro presentations, Los Angeles USA, 2013

**Mr. Ravindra Bucherla, Application Engineer in ARK Infosolutions Pvt. Ltd**



**Mr. Ravindra Bucherla** designated as an Application Engineer in ARK Infosolutions Pvt. Ltd. He has expertise in Ls-Dyna, Explicit Dynamics, Ansys Motion, Ansys Additive suite and working as application engineer in Ansys team of ARK. His major responsibilities include working on projects and queries related to his expertise and giving trainings and technical support both in Industries and Academia. The major projects he worked on

- Impact and Motion Analysis of Robotic Arm.
- Design and Fabrication of a pruning machine. Motion Analysis of hydraulic systems of Boom pump.
- Ballistic simulations of a projectile on a metal plate and composite material.

**List of Approved Participants:**

<b>Sl.No</b>	<b>Participant Name</b>	<b>Affiliation</b>
1	Mr. GANESAN. K	ACS COLLEGE OF ENGINEERING
2	Mr. T. PARAMESH	Global Academy of Technology
3	Mr. Dhanya Prakash R Babu	ACS College of Engineering
4	Dr. BINO PRINCE RAJA D	Global Academy of Technology
5	Dr. Prathik Jain S	Dayananda Sagar College of Engineering
6	Mr. Anand A	ACS College of Engineering
7	Mr. R GANESH	ACS COLLEGE OF ENGINEERING
8	Mr. Sundaramahalingam A	Dayananda Sagar College of Engineering
9	Mr. Shrijeet B. Pagrut	Shri Sant Gajanan Maharaj College of Engineering
10	Mr. Vigneswaran	Dr.Ambedkar institute of technology
11	Mr. Poorna Chandra	GLOBAL ACADEMY OF TECHNOLOGY
12	Mrs. Asha P B	Global Academy of Technology
13	Dr. Ravi Kumar V	Global Academy of Technology
14	Mrs. Sree Lakshmi T	Nmit, Bangalore
15	Mr. GR Gurunagendra	Global Academy of Technology
16	Mr. Bhushan J K	EAST WEST COLLEGE OF ENGINEERING
17	Mr. B.Ravi Kumar Reddy	Indian Institute of Astrophysics
18	Mr. SIVA J	ACS COLLEGE OF ENGINEERING
19	Miss THILAGAVATHI K	Kumaraguru College of Technology
20	Dr. Vasuki A	Kumaraguru College of Technology
21	Dr. Kavitha K	Kumaraguru College of Technology
22	Dr. Dr Priyabrata Adhikary	NEW HORIZON COLLEGE OF ENGINEERING, BANGALORE
23	Dr. Agalya V	NEW HORIZON COLLEGE OF ENGINEERING
24	Mr. Rajesh Chandra C	Dr. Ambedkar Institute of Technology
25	Miss Vidyashree K R	Viat.pg center.chikkaballapuea
26	Mr. Ambrayya	Ballari Institute of Technology and Management
27	Mr. Javalkar Vinay Kumar	Ballari Institute of Technology and Management
28	Mr. SELVAM	RVS TECHNICAL CAMPUS
29	Mr. Radha Krishnan P	ACS College of Engineering

<b>30</b>	Mr. R Kiran	Global Academy of Technology
<b>31</b>	Dr. Selvanandan S	ACS College of Engineering
<b>32</b>	Mr. Albert Allen D Mello	ACS College of Engineering
<b>33</b>	Dr. Manjunath S V	Gopalan College of Engineering and Management
<b>34</b>	Dr. Mukesh R	ACS College of Engineering
<b>35</b>	Dr. Suresh C	ACS College of Engineering
<b>36</b>	Mr. Mainul Ali	Nalbari Commerce College, Nalbari
<b>37</b>	Mr. Vijay M	Acs College of Engineering
<b>38</b>	Mr. Suresh M	Rajarajeswari College of Engineering
<b>39</b>	Dr. Paramaguru V	ACS College of Engineering
<b>40</b>	Mr. Sivaramraj M	ACS College of Engineering
<b>41</b>	Mr. Praveen Kumar M	Dhanalakshmi Srinivasan College of Engineering and Technology
<b>42</b>	Mr. Prashanth M	Dhanalakshmi Srinivasan College of Engineering and Technology
<b>43</b>	Mr. Mohana Pratheep A	Er. Perumal Manimekalai College of Engineering
<b>44</b>	Miss Swethana R	East West College of Engineering
<b>45</b>	Dr. Nishanth P	East West College of Engineering
<b>46</b>	Dr. Srinidhi Acharya S R	ACS College of Engineering
<b>47</b>	Mr. Kumar B M	ACS College of Engineering
<b>48</b>	Mohan Kumar B	Dr. Ambedkar Institute of Technology
<b>49</b>	Mr.Parthasarathy	Acharya institute of technology
<b>50</b>	Mr.Piyush Kumar Soni	NEW HORIZON COLLEGE OF ENGINEERING

## **FDP Inauguration:**

Date: 5<sup>th</sup> February 2024

Venue: Seminar Hall-4 Hall, Aeronautical Engineering Department, ACS College of Engineering,  
Bangalore

The Faculty Development Program on "Emerging technologies in Drone Design and Development" was inaugurated on 5<sup>th</sup> February 2024 at Seminar Hall 4, hosted by the Aeronautical Engineering Department at ACS College of Engineering, Bangalore. This program was organized to enhance the knowledge and skills of the faculty and postgraduate scholars in the field of drone technology.

Participants: A total of 45 participants, including faculty members and postgraduate scholars, attended the inauguration ceremony.

### **Dignitaries:**

Dr.S.N.Omkar-Professor, IISc, Bangalore

Dr.Anandthirtha B Gudi- Principal, ACSCE

Dr.A.K.Mariappan-Rector, ACSCE

Dr.S.Selvanandan-Vice Principal, ACSCE

Dr.A.Krishnakumar-Admin officer, ACSCE

Dr.G.Ramanan - FDP Coordinator, ACSCE

Dr. Inamul Hasan - FDP Co-Coordinator, ACSCE

The ceremony commenced with the lighting of the traditional lamp, symbolizing the dispelling of darkness and the acquisition of knowledge. The dignitaries were welcomed with floral bouquets, signifying the warmth of the institution's hospitality.

### **Speeches:**

Dr. G.Ramanan presented welcome address and introduced the chief guest of the program. Dr.A.K.Mariappan extended his appreciation for the initiative, highlighting the importance of drone technology in modern world. Dr.Anandthirtha B Gudi talked about the significance of collaboration between academic institutions and drone based companies for the betterment of society. He also emphasized the role of faculty development programs in fostering innovation and growth. Dr.S.N.Omkar addressed about importance of the FDP and encouraged participants to make the most of the program and stay updated with the latest developments in the field.

Dr. G.Ramanan, the FDP Coordinator, provided an overview of the program's structure and schedules. He expressed his gratitude to the dignitaries and participants for their involvement and support. The dignitaries' speeches were informative and inspiring, setting the tone for the upcoming faculty development program. The program's agenda, including workshops, lectures, and practical sessions, was outlined, ensuring that all participants were aware of the upcoming activities. The inauguration ceremony concluded with a vote of thanks by Dr.Inamul Hasan to all the dignitaries, participants, and organizers.



**Inauguration Pictures:**



**Lighting Lamp by dignitaries**



**Welcome Address by Dr.G.Ramanan**



**Chief Guest Felicitation**



**Address by Principal, ACSCE**



**Address by Dr.A.K.Mariappan, Rector**



**Chief Guest Address by Dr S N Omkar**



**Vote of thanks by Dr Inamul Hasan**



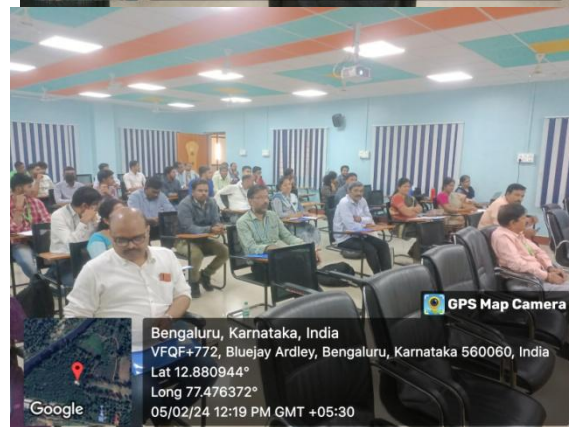
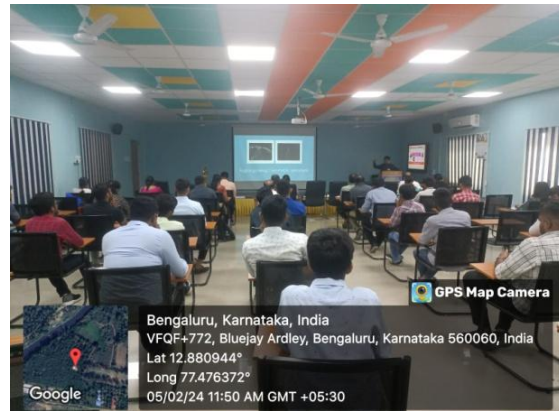
## FDP Program Schedule:

Day 1 05/02/2024	Day 2 06/02/2024	Day 3 07/02/2024	Day 4 08/02/2024	Day 5 09/02/2024	Day 6 10/02/2024
Session 1 9.30 to 12:00	Session 3 9.30 to 12:00	Session 5 9.30 to 12:00	Session 7 9.30 to 12:00	9.00 to 12:00	Session 10 9.30 to 12:00
Drone Computing  Dr Omkar S N Professor, Chief Research Scientist IISc, Bangalore	Internet of things and Internet of Drones  Dr. Ashok G. Matani Professor, Govt College of Engineering, Jalagon	Applications of Artificial intelligence in Drones  Dr.Ramesh Kestur Professor IIIT, Bangalore	Hands on Training in UAV Design  Mr.Aasish Drone Operation Head, Orient Flight Aviation Academy, Chennai	Industrial Visit UAV LAB, IISC	ANSYS Applications for Drones  Mr.Ravindra Application Engineer, ARK Info solutions Pvt Ltd
<b>12:00 to 1:00 Article Discussion</b>					
<b>1:00 to 2:00 Lunch Break</b>					
Session 2 2:00 to 4:30	Session 4 2:00 to 4:30	Session 6 2:00 to 4:30	Session 8 2:00 to 4:30	Session 9 2:00 to 4:30	2:00 to 4:00
IPR, Funding & Commercializat ion in Drone Technology  Dr.T.Thanga Durai Dean- Research, Project and Strategy, RRGi	IOT Applications in Drones  Dr. Ashok G. Matani Professor, Govt College of Engineering, Jalagon	Drone Law & Regulations and Type Certification  Prof.Rajashekharared dy Drone Technology Consultant, Gopalan Aerospace, Bangalore	Hands on Training in UAV Design  Mr.Aasish Drone Operation Head, Orient Flight Aviation Academy, Chennai	Team building for Drone Design and Development  Prof.P.Soma Professor- Aeronautical Former Group Director- ISTRAC, ISRO	MCQ, Feedback & Interactions
<b>4:30 to 5:30 Practical Sessions/Labs</b> <b>Prof.Radhakrishnan, Prof.Albert Allen D Mello and Prof.R.Ganesh</b> <b>Assistant Professor, Aeronautical Engineering</b>					<b>4:00 to 5:00</b> <b>Valedictory</b> <b>Session</b>

Day 1: 05/02/2024 (FN)

Topic: Drone Computing and AI

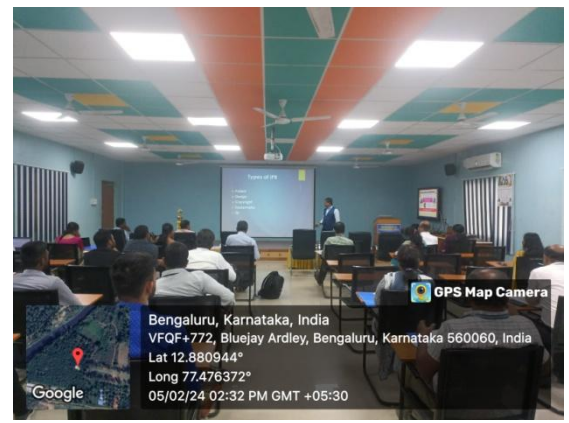
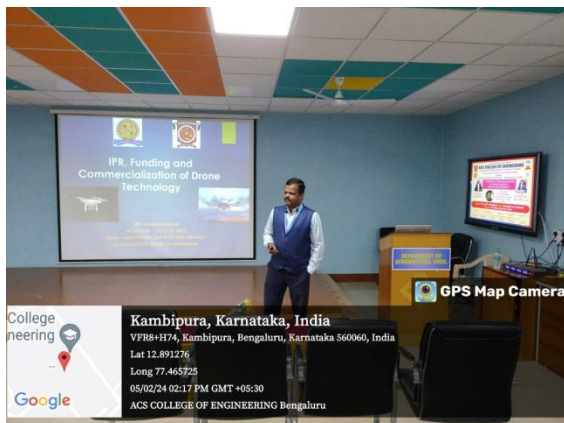
Resource Person: Dr.S.N.Omkar, Professor, Aerospace Engineering, IISc, Bangalore



Day 1: 05/02/2024 (AN)

Topic: IPR, Funding & Commercialization in Drone Technology

Resource Person: Dr. Thangadurai N, Dean- Innovation, Projects and Strategy, RRG





Day 2: 06/02/2024 (FN & AN)

Topic: Internet of Drones & IOT Applications in Drones

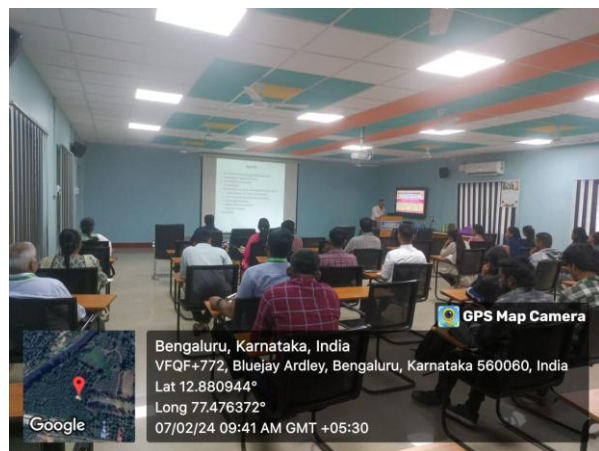
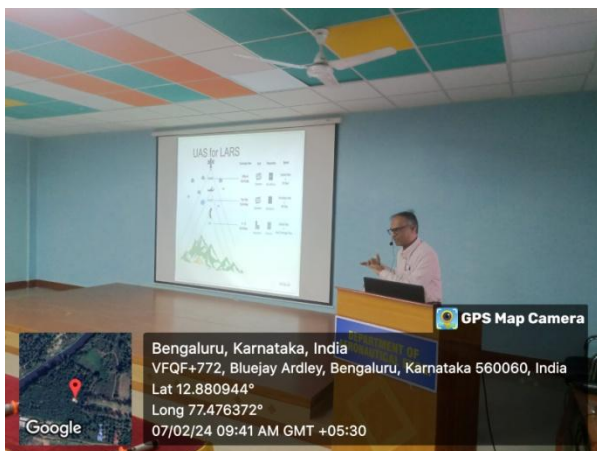
Resource Person: Dr.Ashok G Matani, Professor(Retd.), Govt College of Engineering, Jalgaon

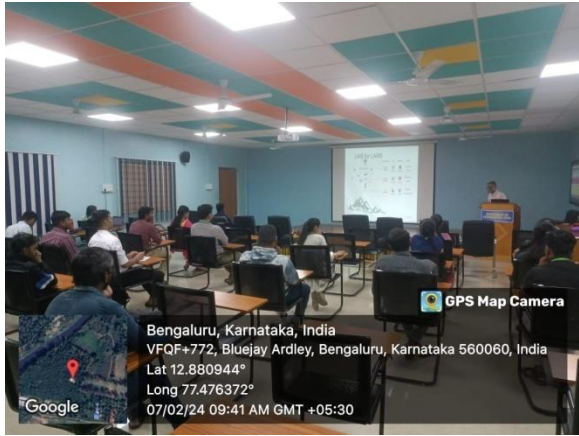


Day 3: 07/02/2024 (FN)

Topic: Artificial Intelligence in Drones

Resource Person: Dr.Ramesh Kestur, Professor, IIITB, Bangalore

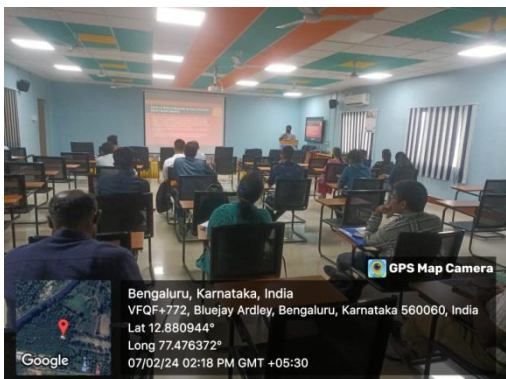
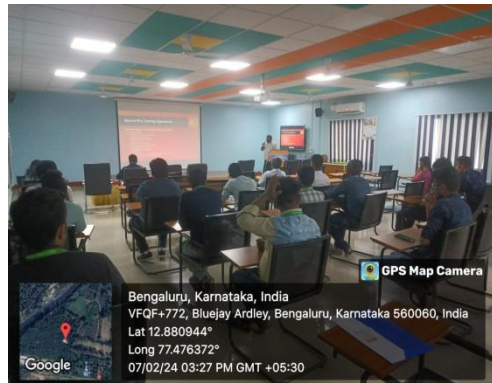
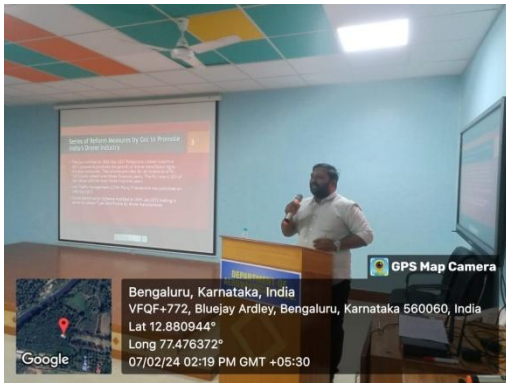




Day 3: 07/02/2024 (AN)

Topic: Drone Law in India

Resource Person: Mr.Rajashekharareddy, Technical Expert, Gopalan Aerospace Pvt Ltd





Day 4: 08/02/2024 (FN & AN)

Topic: Hand on Training in Drone Design

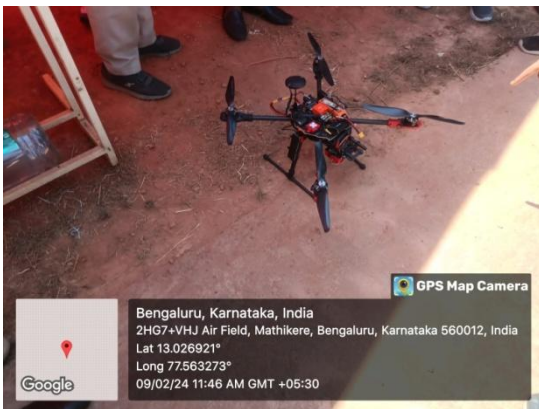
Resource Person: Mr.Aasish.C, Head-Drone Operations, Orient flight Academy





Day 5: 09/02/2024 (FN)

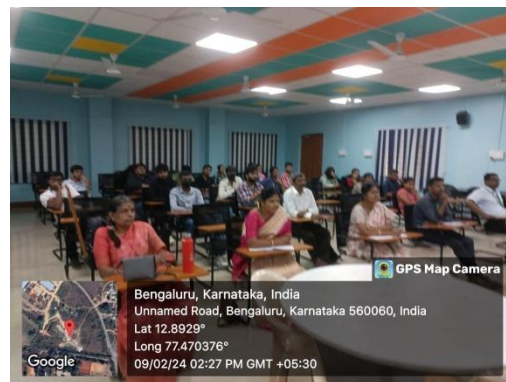
Topic: Industrial Visit to UAV Lab, IISc, Bangalore

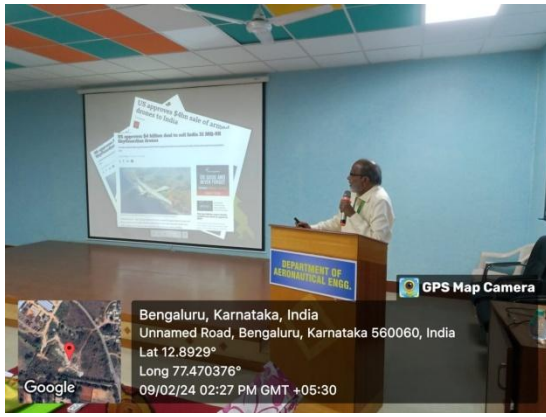


Day 5: 09/02/2024 (AN)

Topic: Team Building

Resource Person: Prof.P.Soma, Former Group Director, ISTRAC, ISRO

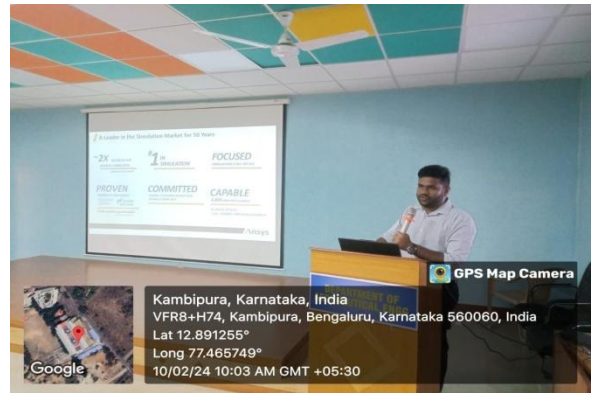




Day 6: 10/02/2024 (FN)

Topic: ANSYS Solutions for Drone

Resource Person: Mr.Ravindra Bucherla, Application Engineer, ARK Solutions Pvt Ltd





## Lab Sessions



## Feedback & Valedictory Session



**Reflection Journals:**

Participants were informed to submit reflection journals throughout the FDP to record their reflections and notes on each session. These journals served as a means for participants to consolidate their learning, jot down queries, and express personal insights. The journals were highly beneficial in helping participants internalize the content and apply it to their respective roles and interests. They provided a medium for self-assessment and self-directed learning.

**MCQ Test:**

To assess the participants' comprehension of the FDP content, a Multiple Choice Question (MCQ) test was conducted, covering key topics from the program's sessions. The test aimed to gauge how well participants absorbed and retained the material presented to them during the program. The test was a valuable tool to evaluate knowledge transfer and retention.

**Feedback:**

After the MCQ test, participants were encouraged to provide feedback on the FDP. The feedback solicitation was a vital component in understanding the overall effectiveness of the program. Participants were invited to share their thoughts on session content, instructors' presentations, the structure of the program, and the organization. Their feedback was essential for refining future FDPs and tailoring them to the needs of the participants.

Overall, the reflection journals, MCQ test, and feedback collection were integral elements in ensuring the success of the Faculty Development Program. The journals helped participants retain knowledge, the MCQ test evaluated their understanding, and the feedback facilitated continuous improvement. This comprehensive approach ensures that future FDPs will be even more tailored to the participants' needs and will continue to be a valuable platform for learning and professional growth.

**Vote of Thanks:** Dr. G.Ramanan, the FDP Coordinator, delivered the vote of thanks, expressing gratitude to the ATAL Team, ACSCE Management, dignitaries, instructors, coordinators, and participants. He emphasized the collective effort that made the FDP a resounding success, concluding by encouraging all to continue their pursuit of knowledge and to apply what they've learned in their academic and professional journeys. The Faculty Development Program on "Emerging Technologies in Drone Design and Development" was a fulfilling and enlightening experience, fostering growth and innovation in the field of Drone Technology.

Thank you!