

Foreword from the President:

It has been an amazing year overall for the club, core team 2021-22 took a lot of new initiatives and explored the unexplored paths and leaving no stones unturned right from getting sponsors, conducting guest lectures, networking with alumni and other aeromodelling clubs across India and abroad too, strengthening our fabrication and piloting skills and establishing our marketing and design teams, forming 3D community accessible by every student of NITT, streamlining and narrowing down the aero domain by demarcating it into structures, aerodynamics and avionics, starting rocketry and student satellite domains in the campus, which is first of its kind in the college.

Initiatives/Projects taken up this year:

- E-Yantra: A project based robotics competition organized by e-yantra set up by IIT Bombay and Ministry of Education. Our project theme was strawberry stackers that reduces physical toil on strawberry farms by making strawberry stacking for transport an automated process using multicopters. We applied the concepts of control systems, image processing, mission planners and distributed systems, while using the typical software stacks used to control flying vehicles and plan missions for them.
- CNC cutter: It is a tool that we developed, which streamlines the process of making the wing of a plane. In the process of fabricating a plane, previously a major portion of the time was invested in fabricating the wing of the plane, and a small percentage of error in the structure of the wing affects the performance of the plane drastically. With this development of a CNC cutter, the fabrication of the wing is fast-forwarded, and the error in the structure of the wing is reduced to less than 1%.
- Vertical Takeoff and Landing(VTOL) Since the demand for this type of fixed wing RC plane is booming due to its versatility, we decided to take it up as a project and add our innovations to it. Our design is unique in terms of positioning of rotors and the transitioning mechanism from VTOL to glider and vice-versa. The application includes surveillance and carrying pay-loads in difficult terrains and during disasters. We presented this idea in Techfest 21-The technical fest of IIT Bombay and were among the top 15 teams.

- Albatross : The current demand in the market of energy efficient, electric emergency vehicles has been on an all time high, with multiple forest fires and other forest dangers. This project aims at making a fixed wing energy efficient glider capable of image processing capable of detecting fires and signaling its location to the nearest emergency operatives. The UAV has the capability to fly for 2 weeks straight without landing.
- Butterfly fish: This project aims to design and develop a fixed-wing unmanned vehicle capable of operating in both aerial and underwater conditions, with repeated transitions exhibiting the properties of an aircraft and submarine simultaneously in one single design. This project addresses and tackles the challenges of dynamic transitions between air and water.
- Flipkart Grid: GRID is Flipkart's Flagship Engineering Campus Challenge which provides us the opportunity to apply our technical knowledge and skills, to compete and complete key challenges. Flipkart GRID brings Live Problem Statements from the world of E-Commerce to the brightest minds of India and lets us put your capabilities to the ultimate test.

Upcoming Initiatives:

- New sub domains in our club - Rocketry and Student satellite program.
- Inductions for dedicated marketing and design teams for the club.
- Campus Development Initiative
College Bus Tracking System, which runs on Android smartphones. This enables students to find out the location of the bus so that they will not get late or will not arrive at the stop too early. The main purpose of this application is to provide the exact location of the nitt buses and provide information like bus details etc. It is a real time system as the current location of the bus is updated every moment in the form of latitude and longitude, which is received by the students through the application.

Achievements:

- TechFest 2021 IIT Bombay – AL VTOLA One among Top 10 Finalists – 100+ teams participated across India
- Tathva, Technical fest of National Institute of Technology Calicut – Aviate 2022 first place – Team 3D
- Pragyan – Sangam 2022 Energy and Environment – Second place – Team Albatross
- Got sponsorship from Solidworks (a reputed CAD modeling and simulation tool) for SAE Aerothon 2022

Core Members:

S. R. Harshini (111118102) - President

Sai Charan G. (111118035) - Vice - President

Sindhuri Grandhi (114118034) - Treasurer

Darshan Savaliya (107118090) - External Relations Manager

Shreepad Narasimhan (111118098) - Technical Head - Aero

Praveen Dwivedi (102118047) - Technical Head - Tronix

Praveen Kumar Yadav (110118061) - Technical Head - Tronix

Satuluri Rajesh (114118079) - Pilot

Faculty Advisor: AEROMODELLING CLUB OF NITT

- Dr.G.Rajasekaran (Mech Dept)