

DJS Antariksh

International Planetary Aerial Systems Challenge (IPASC) 2021 Report

Achievements:

1. Team DJS Antariksh achieved the **2nd Rank Worldwide** among 26 International Teams.
2. The team ranked **1st in Asia**.
3. The team also ranked **1st in India**.
4. The team was successfully able to secure a podium finish in its first attempt with a total of **560.51 points**.

Competition Summary:

Mars Society South Asia's International Planetary Aerial Systems (IPAS) Challenge 2021 was aimed to encourage students to design an astronaut-assistive **Unmanned Aerial Vehicle (UAV)**, which shall be fully equipped and mission ready for **Operation on Mars**. The primary objective of this challenge was to design a UAV that can perform certain Functions and Tasks to assist astronauts and carry out certain analyses of terrain while airborne on the Red Planet. It was an entirely off-site competition, and no physical inception of designs was mandated to the teams. The Registration Window for the IPAS Challenge 2021 was 10th to 20th March 2021, and the Engineering Design Report (EDR) submission deadline was 5th May 2021.

Competition Tasks:

- 1) **Reconnaissance Mission** – The aim of this task was to capture a digital orthophoto using photogrammetric methods of a piece of land on Mars, measuring at least 300 square metres.
- 2) **Logistics Mission** – The aim of this task was to pick up and deliver a package weighing 100gms from the base station to another delivery station. The UAV was supposed to pick up/drop the package using its abilities, without human interference.
- 3) **Atmospheric Analysis Mission** – This task was intended to collect data of the relative abundance of various gases (CO₂, N₂, Ar, O₂ etc.) present in the Martian atmosphere, relative humidity, and temperature at any given coordinate.

Team Structure:

1. Team Captain – Rutwik Bhangale
2. Team Vice Captain – Sandeep Jala
3. Team Manager – Yukti Shah
4. Electronics Head – Parshvi Doshi
5. Mechanical Head – Vedant Singh
6. Coding Head – Jazib Dawre
7. Marketing Head – Darshan Mehta
8. Science Head – Vishal Umariya



INTERNATIONAL PLANETARY AERIAL SYSTEMS CHALLENGE
"Propelling Exploration"

1	1. TEAM LEGENDARY	608.26
2	2. DJS ANTARIKSH	560.51
3	3. TEAM TECHNOCRATS	550.34
4	4. AEROS	532.24
5	5. RGIT's PEGASUS	526.45
6	6. INFERNO DTU	520.32
7	7. COSMOSTELLAR	518.92
8	8. TEAM INTERPLANETAR	513.41
9	9. KUET DURBAR	510.91