The Aeronautical Society of India
Design Division & Mumbai Branch

National Seminar on

Regional Air Transport: Tarmac to Towns

and

Final round of 8th National Aerospace Conceptual Design Competition (NACDeC-VIII)

23rd Aug. 2025

Venue:
The Aeronautical Society of India
Suranjandas Road Junction,
New Thippasandra Post,
Bengaluru-560075

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Design Division, AeSI

The Aeronautical Society of India has set-up its Design Division in 2017 to be the torch bearer for aerospace design professionals to help them scale the professional heights by offering a platform for inter-organizational exchange of ideas, to report professional contributions, to meet, interact and learn from professionals from across the world, and to update and augment professional knowledge.

National Seminar on Regional Air Transport: Tarmac to Towns

This year's seminar is centered around India's evolving efforts toward the design, development, and deployment of a fully indigenous **Regional Transport Aircraft (RTA)**. With a growing emphasis on regional connectivity, technological self-reliance, and sustainable aviation, the seminar brings together leading experts to present a forward-looking perspective on the key technological, operational, and industrial dimensions of RTA development.

The pre-lunch session will feature a series of **invited talks** covering various facets of RTA, from its historical context to the latest technological innovations and strategic initiatives. These discussions are aimed at fostering a deeper understanding of the challenges and opportunities in establishing a robust RTA program that meets India's regional aviation needs.

National Aerospace Conceptual Competition NACDeC

One of the mandates of this Division is to encourage and nurture Aerospace design related activities in the country, especially among the engineering college students, and encourage them to apply their mind to address challenging aerospace design problems relevant to the needs of our country.

With this in mind, the Design Division is conducting a yearly National Aerospace Conceptual Design Competition (NACDeC) for students. The final round of the design competition is scheduled during post lunch session. NACDeC-VIII is being held in four stages, and 45 student teams had participated in it. Five of these teams have been shortlisted for the final round, to be conducted as part of this seminar.

Topic for NACDeC-VIII

The NACDeC VIII competition challenges student teams to develop the conceptual design of a Supersonic Unmanned Combat Aerial Vehicle (SUCAV) intended for conducting surveillance and combat operations. The primary mission objective for the SUCAV is to optimize range, mission time, and payload capacity while maintaining high-speed performance and operational effectiveness. SUCAV is designed for rapid deployment in contested environments, performing reconnaissance, surveillance, and tactical engagements with an emphasis on long-range operations and sustained flight capabilities. SUCAV must achieve extended supersonic flight across varying altitudes to enable fast deployment and strategic positioning.

To successfully complete the mission profile, the SUCAV must achieve supersonic cruise capability, operate with low radar cross-section, and carry a 1000kg payload for takeoff to strike location range of 1,000km. SUCAV must demonstrate robust performance across several critical flight segments. Initially, it should be capable of climbing to a cruising altitude of 14 km and maintaining this altitude effectively. SUCAV must also be able to descend to 1.5 km altitude for specific operational needs, with smooth ingress and egress transitions which could be at subsonic Mach numbers. Additionally, the onward and return cruise segments should be supersonic, ensuring rapid transit and enhanced operational capability. Furthermore, SUCAV must be designed for stealth, minimizing its radar cross-section (RCS), infrared (IR) signature, and aural detectability. Takeoff and landing distance for SUCAV must be less than 2 km. Finally, the SUCAV must be equipped to execute a controlled and safe landing, concluding the mission reliably. Meeting these performance criteria is essential for optimizing SUCAV's mission effectiveness and operational reliability.

Venue

The Aeronautical Society of India, Suranjandas Road Junction, (In front of HAL Engine Division) New Thippasandra Post, Bengaluru-560075

Who Should Attend?

Working professionals in Aerospace Companies, Researchers, Faculty members of educational establishments, and anyone else interested in learning more about the dynamics in Indian Aviation industry

Seminar Fee

There is no registration fee however prior registration is compulsory.

How to Attend

Attending the National Seminar is by invitation only.
For registration, Scan the QR Code.

For any queries send email to the following

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Organizing Committee

- **Dr. Abhay A. Pashilkar**, Director, CSIR-NAL (Chairman)
- **Dr. Rajkumar S. Pant**, Professor, IIT Bombay (Chairman, DD-AeSI)
- **Mr. Rakesh Kumar**, Sc F, ADE (Secretary, DD-AeSI)
- **Mr. Vidyadheesh Pandurangi**, Sc G, GTRE (Treasurer, DD-AeSI)
- **Mr. Sahil Bansal**, Sr. Principal Scientist, CSIR-NAL (Coordinator, Seminar)
- **Dr. VPS Naidu**, Chief Scientist, CSIR-NAL (Convener)
- **Dr. Achuthan C. Pankaj**, Chief Scientist, CSIR-NAL (Member)
- **Dr. Tanvi Prakash**, AGM, L&T Defence (Member)
- **Mr. A. Vadivelan**, Sc. F, ADE (Member)
- **Mr. Pranav Gupta**, IIT Bombay (Coordinator, NACDeC-VIII)
- **Ms. Prachi Magar**, TIAT Mumbai (Coordinator, NACDeC-VIII)

Schedule 23rd August 2025

Morning Session

09:00 - 10:00 Registration and High Tea

10:00 - 10:30 Inaugural Session

Welcome address by **Dr. Rajkumar S Pant, IIT-B** and
Inaugural address by **Prof. Joseph Mathew,**
HoD, Aerospace Engineering, IISc

10:30 - 11:00 Invited Talk-1

Past Present and Future of RTA
by **Mr. Sahil Bansal, CSIR-NAL**

11:00 - 11:30 Invited Talk-2

Electric Hybrid Next Gen. RTA
by **Mr. Devendra Singh, CSIR HQ**

11:30 - 12:00 Invited Talk-3

Aerodynamic Advancements and
Modern Technologies for RTA
by **Mr. Niranjanan C K, CSIR-NAL**

12:00 - 12:30 Invited Talk-4

Mechanical System Design and Indigenisation Efforts for RTA
by **Mr. Manoj Kumar Singh, ARDC-HAL**

12:30 - 13:00 Sponsored Talks

13:00 - 14:00 Lunch Break

Afternoon Session

14:00 - 14:15

General Remarks on NACDeC- VIII by Dr. Rajkumar S Pant, IIT-B

14:15 - 16:45

Presentations and Evaluation
Final Round of NACDeC-VIII
Total 5 finalist teams - 30 mins each
Note: Order of presentations will be decided randomly by the jury

16:45 - 17:15 Tea Break

17:15 - 17:45 Announcement of Winners & Overview of NACDeC-IX

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