



DLR DESIGN CHALLENGE 2025

MedEvac: Designing the Future of Emergency Air Transport

Background

In emergency situations, rapid and efficient medical evacuation can mean the difference between life and death. This year's DLR Design Challenge invites participants to develop innovative aircraft concepts that improve medical evacuation (MedEvac) capabilities. These specialized aircraft must be designed to ensure speed, stability, and patient safety, while also integrating advanced medical equipment and optimizing fuel efficiency.

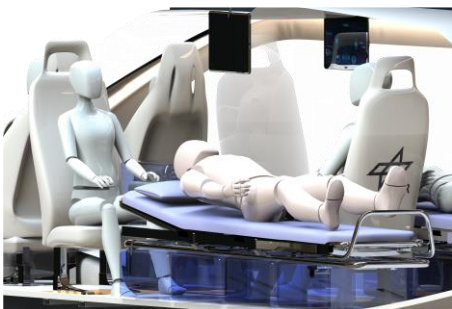
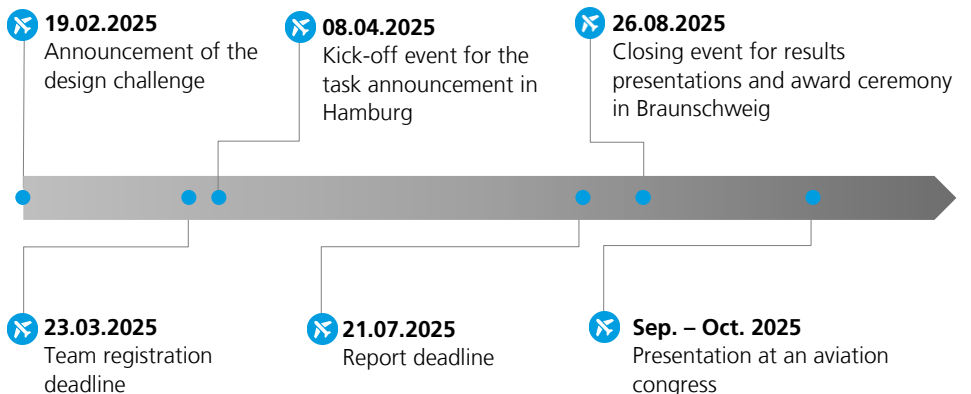
Participating teams will address a range of mission scenarios, from rapid emergency response to long-distance medical evacuation. The challenge requires each team to design an innovative, high-performance MedEvac aircraft that meets critical operational, medical, and cabin requirements. Students must balance between medical transport solutions and optimal aircraft performance across the diverse mission profiles. By integrating advanced aviation technologies, smart medical systems, and streamlined rescue procedures, teams will develop holistic MedEvac solutions that enhance emergency response capabilities.

Organization

You and your fellow students are interested? The German Aerospace Center (DLR) is inviting you to represent your university at the DLR Design Challenge 2025. For team registration, please get in touch with the responsible supervisors at your university, who will forward the registration to DesignChallenge@dlr.de.

- Each team may consist of a maximum of six members, However, at least one team member must represent the team at each event.
- Kick-Off event and release of the detailed design task.
- Preparation of a technical report for the documentation of the results.
- Closing event and presentation of the results by all teams.
- Evaluation of the reports by a jury of experts from the DLR.

Preliminary planning for this year's Design Challenge:





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Task overview

- Teams are asked to design an efficient aircraft for the year 2035 with rapid medical response capabilities.
- Teams will design aircraft capable of serving a variety of operational scenarios, including in-flight and on-ground medical care, take-off and landing on various types of ground, and the execution of a range of mission profiles. The scenarios will be predefined.
- Teams are free to choose the design range of their concept to best address the given scenarios. The same applies to the number of paramedics and patients, with the constraints set at a range of 6 – 19 PAX.
- The competition report must be written in English, must not exceed 25 pages, and may contain content from your own theses.

Kickoff event

The kickoff event will take place on Tuesday, April 8th, 2025, at the DLR (German Aerospace Center) site in **Hamburg**. The travel expenses of the teams will be reimbursed according to the Federal Travel Expenses Act. The provisional agenda includes:

- Welcome address by Prof. Dr. Anke Kaysser-Pyzalla, Chair of the DLR Executive Board.
- Introduction by Dr. Markus Fischer, DLR Aviation Board Member and Chair of the Jury.
- Presentation of the Institute of System Architectures in Aeronautics and the Institute of Aerodynamics and Flow Technology.
- Keynotes from subject matter experts on the theme of this year's Design Challenge.
- Announcement of the task.
- Guided tour of the DLR site in Hamburg

Recognition

- The top three teams will be invited to present their results at the German Aerospace Congress (DLRK) 2025 from September 23rd to 25th, 2025, in Augsburg.
- Additionally, the winning team will have the opportunity to present their design at an international professional conference.

