



DLR Design Challenge 2022

Help Tackling the Threat of Wildfires!

Background

Wildfires pose a tremendous threat to people, wildlife, and forestland. In the light of global warming, wildfires are an ever-increasing problem all around the world. Not only are the wildfire seasons getting longer, but the fires are also becoming more and more intense, which leads to further carbon dioxide emissions.

Aviation has a key position among the available firefighting assets. By reducing the fire intensity and slowing down the fire propagation, aerial suppression enhances the firefighting effectiveness and makes ground-based firefighting safer. However, the aerial suppression operations are costly and, due to aged vehicle technology, stay behind their full potential.

Therefore, the ongoing development of advanced aeronautical systems such as unmanned aircraft systems or urban air mobility vehicles yields the opportunity of designing future-oriented aerial firefighting vehicles for direct suppression attacks. While there is a large design space allowing for different vehicle architectures across various weight classes, the vehicles shall enable very short or even vertical take-off and landing operations to scoop from water sources such as lakes in the proximity of the wildfire area. Finally, the goal is to maximize the amount of water delivered to the fire front by the design of energy- and cost-efficient aeronautical systems.

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 2022. For team registration, please get in touch with the responsible supervisors at your university, who will forward the registration to DesignChallenge@dlr.de.

- Maximum six team members, whereas each team must be represented by at least one team member at each event
- Virtual kick-off event and release of the 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
- Contribution to an international aviation congress by the winning teams*

*These events will be in presence only if the current pandemic situation permits. Else these events will take place virtually.

More detailed timeline along with further participation requirements will be given due notice.

