

**Topic:**

Development of a payload loading system for a competition model aircraft



Fakultät für Luftfahrt,  
Raumfahrt und Geodäsie  
Lehrstuhl für Luftfahrtsysteme



**Description**

AkaModell München is a student club that designs, builds, and flies model aircraft. The aim is to use the theoretical theory from the lectures and directly transfer it to a flying aircraft. Therefore, we often compete in international student competitions. For this year's competition, we developed two engineering projects for the aerospace bachelor.

In aviation, payload transportation is the most essential task for commercial aircraft. Passenger aircraft are developed around the payload that they are supposed to carry. The goal is to transport as much cargo as possible, as secure as possible to fly safely and provide a fast loading and unloading time to reduce turn-around times.

The AkaModell München participates in a student competition in summer 2024. With this engineering project, you can be an essential part of shaping the competition aircraft.

This competition also refers to the critical role of payload in the regulations. Approximately 1/3 of the competition points refer to payload transportation. In this case, billiard balls have to be transported as payload. The aim is to secure them adequately while placing them densely and enabling fast loading and unloading. A significant point is that one ball cannot be forced to transmit to other billiard balls.

The goal is to develop different concepts, discuss them, and further develop them in the team. The elaborated concept can be evaluated as a downsized prototype with the 3D printer and marbles as payload. If proof of concept can be shown, it is possible to build it in actual size with lightweight structures with the help of the AkaModell members, as time allows.

**Student profile**

The student should be motivated in **practical mechanical engineering**.

Previous interest in **CAD** and model aircraft experience are beneficial but not required.

A reliable work ethic and clean documentation of the tasks is required.

**Timeframe**

Please send your application until latest Thursday 22.11.2023.

You can use bullet points and please try to stay within half a page A4.

**Contact**

Christian Rieger, M.Sc.  
Room 3633  
(089) / 289 - 15983

 [christian.rieger@tum.de](mailto:christian.rieger@tum.de)

