

Q&A #2

This Q&A summarizes the already asked questions to avoid unnecessary work answering them multiple times. The Q&A will be updated occasionally.

General

1.

Question: Because our wing is so small, we would like to make team number around 8 cm high, not 10. Is it allowed?

Answer: No problem. Please just make sure it can be easily seen (so e.g. make the numbers bold and wide)

2.

Question: Can we touch the payload in the five minutes preparation time?

Answer: Yes

3.

Question: Are the balls allowed to touch each other when loading?

Answer: yes

4.

Question: What counts to the 30 page limit of the Design Report? Title page? Table of contents? What can/must be in the appendix?

Answer: Everything except the appendix must be within the 30 page limit. The number of pages indicated by the PDF reader counts.

The appendix must contain at least the three required drawings. Additional amendments are up to you if they support the work done.

5.

Question: in the rules it is stated that "To have better comparability between the different reports, the report shall contain at least the following chapters:(...) Payload Prediction". Is it just simply how many balls do we aim to have, or we should predict how many balls to take against the temperature for example?

Answer: up to you

Regarding possible changes of aircraft:

1.

Question: During the flights round we will upload the payload on the model. This phase will be repeated at the beginning of every flight round that we want to do? Let's assume that we want to flight twice, so two flight rounds. In this case, the payload has to be the same or is allowed to change the number of balls? can we flight twice with a different amount of payload?

Answer: You can change the payload for every round. However, all teams must announce their planned payload at the beginning/before each flight round. You are also allowed

2.

Question: Are we allowed to make small changes to the configuration of our aircraft based on the competition strategy? For example, are we allowed to install a different propeller for each competition flight, basing on the competition strategy we want to undertake? Or is the choice of the propeller frozen with the submission of the technical report?

Answer: Between Design Report and Competition you can make changes to your aircraft. Just observe the dimensions that will be measured and potential penalties given. During the competition you are allowed to change propeller, payload number and battery.

Measurement Box:

1.

Question: Can you please provide some details on the way the box will be mounted on the airplane? Will it have threads at the holes or should we have threads for the bolts on the airplane?

Answer: Two holes with 3.2mm diameter. Threaded inserts or similar must be in your aircraft directly below the box. The screws used will be 40mm long. (Box is 30mm thick)

2.

Question: Does the automated measuring equipment have its own battery in it?

Answer: Yes

3.

Question: Are the data from the Measurement Box available via telemetry?

Answer: We are working on a telemetry link but can not guarantee it.

4.

Question: In our design we would want to mount the automated measuring equipment box via m3 bolt as specified by the rules, but the m3 nuts would be placed above the box, not below. (we would screw box in place from below). Is it allowed?

Answer: No, as everything above the box is the 'keep-out-sphere'

Definition 'Fly-by-wire':

1.

Question: Gyros, either integrated inside RC receivers or as an external gyro are allowed as long as no navigation/position/route control is done" stated in rule booklet 3.3.7. Are speed control and climb rate control included in the scope of position control? Accordingly, we will add a few systems to assist the pilot in our system and we will add a speed stabilizer without direct position control and we will help the pilot (the speed is again determined by the pilot via the remote control, but the system will try to stabilize the speed). It will not include autonomy, it will only include fly by wire so that our flight stability will increase.

Answer: The systems listed above are allowed.

2.

Question: Will there be any feedback about the PRs in order to let the teams know if they are working on something the organization committee found dangerous or might be against the rules?

Answer: No

3.

Question: We are developing a flight control card with original software using a commercial microcontroller. We believe that this will provide us advantage in specific aspects. We plan to fly in fly by wire flight mode, which will stabilize the pilot commands on the roll pitch yaw axis with the gyro on it. Are teams allowed to do this?

Answer: Yes

4.

Question: Can we use an arduino to control the signal sent to the ESC so that we control the current drawn?

Answer: Yes

Information Email from the 24th April 2024:

This email was sent on April 24 to all team email addresses and is here included as well for reference by everybody.

Dear ACC2024 Participants,

As the event nears, please review the updated logistical details and participant arrangements to ensure a seamless experience:

Rules and Q&A #2:

Please find the updated rules and the second Q&A attached and on the website. This should also cover all questions asked by you in the last few weeks and sometimes not answered yet. If not, the questions are already covered by the rules or first Q&A

Accommodation

You will be housed at the A&O Hostel, ideally situated next to Aachen Hauptbahnhof (main train station) at Hackländerstraße 5, 52064 Aachen. Detailed room assignments will be available upon your arrival. We will try to accommodate all members of a team in the same room. We cannot regard special wishes like special room arrangements or rooms for faculty advisors/professors.

Invitation Letter

If you need an invitation letter (e.g. for Visa application), please write us an email with the information you want to be included.

Travel from Airports to Aachen Hbf

For travel from Cologne, Düsseldorf, and Frankfurt airports, trains are the best option. We recommend checking <https://www.bahn.de> or Google Maps for the most suitable train connections to Aachen.

Travel to Condor Würselen

Participants will be transported daily from the A&O Hostel to the competition venue via shuttle. Shuttles leave at 8:00 AM and will drop you off at bus stop Gouleystrasse, a short 15-20 minute walk from Condor Würselen. The return shuttle is scheduled for 6:30 PM. For those using Google Maps, here is the location: <https://maps.app.goo.gl/SmCjfbxPpf9XWPXs8> and the route by foot from the bus stop: <https://maps.app.goo.gl/kD7YDZ4GppDKshZa9>.

Participant Details and Additional Participant

Teams will maintain their previously assigned spots, with the flexibility to update participant names as necessary. Additionally, we can welcome 100 more participants for the fly-off site and final dinner. We cannot provide accommodations for these participants. For those not staying at the hostel, a fee of €100 covers lunch, the final dinner, and full access to the competition site including the tent. You will receive deadlines for the payment with the confirmation of the assigned spots. You can bring even more people with you but we cannot offer food, entry into the tent and may limit the number of persons at the flight field.

Teams wishing to change participant names or claim additional spots should submit their updates by May 1, 2024, using the attached form. The places will be assigned by the same schema as last time. You will receive an update who is getting how many additional places no later than May 7. This team roster is the final one. No changes are accepted after this!

Payment Confirmation

All teams have been confirmed for payment unless notified otherwise.

Meal Arrangements

Lunch will be served at the airfield and will be vegetarian. Please note that there was a misunderstanding in our previous communications; no regular dinner will be provided except for the final dinner, which will include both vegetarian and non-vegetarian options.

Important Information for Pilots

Pilots must obtain a specific knowledge certificate, available on <https://kenntnisnachweisonline.dmfv.aero/en/>.

We have been informed by the airfield board that only a specific type of insurance is desired on the premises. We are currently clarifying the details and hope to provide you with more precise information in the coming days. Please stay tuned for further updates.

For Teams Arriving by Car

Please be aware that parking at the airfield is limited. In case of full capacity, you are required to park on the streets within Würselen in accordance with traffic regulations.

Parking Information Around the Hostel

Parking on the streets surrounding the hostel is free of charge from 9 PM to 9 AM. During daytime hours, the maximum parking duration is 1 hour at a cost of €3. Alternatively, vehicles can be parked in nearby garages. For example, the Parkhaus Hauptbahnhof located at Lagerhausstraße 20, 52064 Aachen, charges €2 per hour, with a maximum of €6 per night (from 8 PM to 8 AM). Please be aware of the reduced entry height limitation of 1.9 meters in this parking garage.

Check-In and Event Schedule

- Check-in at the Hostel: From 3:00 PM on Tuesday.*
- Wednesday: The event begins at 9:00 AM with the technical inspection, lunch at 12:00 PM, and flights starting at 1:00 PM.*
- Thursday and Friday: Flights commence at 9:00 AM. The specific end time for flights on Friday will be communicated later, likely between 3:00 and 4:00 PM. In the evening are the award ceremony and final dinner. Open end.*
- Saturday: All rooms must be vacated by 9:45 AM.*

Jury Members

The jury includes Univ.-Prof. Dr.-Ing. Eike Stumpf, Ivo Zell, Maximilian Fries, and others soon to be confirmed.

Title Page Design

We previously indicated that we would provide a cover page for your reports. However, we have decided to encourage teams to design their own cover pages this year. While the aesthetics of your cover page will not contribute to your overall score, we are looking forward to seeing your creative and unique designs. This is a great opportunity to showcase the personality and spirit of your team!

Attached are the form for updating participant details, current rules and second Q&A. Ensure you bring all required documents and equipment for the technical inspection and flights. We look forward to a successful and enjoyable event. Thank you for your cooperation and attention to these details.

*Best regards,
Ivo Zell*

Air Cargo Challenge 2024 Team