

# Rules of the New Flying Competition 2022

## 1. General Officials Authority

- 1.1. The officials have the right to change the competitions schedule if necessary, to their discretion, to provide a safe and efficient competition.
- 1.2. The officials have the right to interpret the rules and regulations to their sole judgement to ensure a safe and fair-minded competition
- 1.3. The members of the competing teams are required to follow any instruction given from the officials
- 1.4. Any announcements published by the officials are to be considered part of the rules and regulations.
- 1.5. Only the newest version of rules for the current competition are valid.
- 1.6. By sending the reports, each participant transfers ownership of the reports to the officials.
- 1.7. By sending the reports, the event management has the rights to publish the content
- 1.8. The rules apply beginning from team application until the official end of the competition.
- 1.9. False statements or rule violations before, during or after the competition may also lead to retroactive disqualification and penalties.
- 1.10. Any questions concerning the interpretation of a rule will be answered by the officials.
- 1.11. If a member of a competing team fails to follow an instruction given by the officials, the team will be punished with a 50 % penalty / disqualification.
- 1.12. Arguments with the officials result in the team receiving a 20 % penalty / disqualification.**
- 1.13. Unsportsmanlike Conduct will result in a penalty up to disqualification.
- 1.14. Even the violation of the intent of a rule will be interpreted as a violation of the rule itself.

## 2. Payments

- 2.1 Payment for the registration fee must be made 2 weeks after receipt of the invoice. If this is not the case, a payment reminder will be sent. The team will get another 2 weeks to pay the invoice. If the invoice is still not paid, the team will not be able to participate in NFC 2022.

## 3. Questions concerning rules and regulations

- 3.1. Any questions regarding the rules and regulations need to be addressed to the officials by the team captain.
- 3.2. Questions already addressed in the FAQs on the competition website will not be answered.
- 3.3. Valid questions will be answered by the officials and updated to the FAQs on the competition website.
- 3.4. Questions need to be asked as described on the competition website.

## 4. Protests

- 4.1. If a team feels the interpretation of a rule has caused them a disadvantage, they may submit a protest.
- 4.2. **Any official protest has to be filed in written form. The protest needs to be presented to the officials by the team captain as described on the competition website. Furthermore, the team has to post a 10% protest bond (10% of the team's final points) which will be lost if the protest is rejected.**
- 4.3. Protests concerning any aspect of the competition itself must be brought to the officials' attention within 1 hour after the last scheduled flight.
- 4.4. There will be no protest allowed concerning the reports.
- 4.5. The decision of the officials regarding any protest will be presented to the team captain in written form and is final.

## 5. Teams

- 5.1. A team member can only be part of one team and work on one model-aircraft.
- 5.2. Each team must have one team member identified as the team captain who is considered the main contact person for the officials during the competition.
- 5.3. Participants need to be enrolled as degree seeking undergraduate or graduate students at a university. Team members who graduated at a maximum 8 months prior to the competition weekend are still permitted to participate.
- 5.4. Every team is allowed one PhD student as a team member.
- 5.5. Every participant of the competition, entering the airfield is obliged to sign a liability waiver.
- 5.6. Pilots have to follow German regulations with licensing and rules concerning unmanned air vehicles ("*Verordnung zur Regelung des Betriebs von unbemannten Fluggeräten*"). Further information will be published by the organiser.

## 6. Deadlines

- 6.1. Deadlines for submitting official documents or information needed from the team captain will be announced at least 2 weeks beforehand.

## 7. Late submissions

- 7.1. Late submissions of documents will be penalized with a deduction of 1% of the team's final score for every begun 24 hours of delay.
- 7.2. Late submissions of the Preliminary Design Report will be penalized with a deduction of 15% of the team's score for the PDR for every begun 24 hours of delay.
- 7.3. Late submissions of the PDR of more than 7 days will be penalized with a score of 0 points for the PDR.
- 7.4. Late submissions of the Final Design Report will be penalized with a deduction of 15% of the team's score for the FDR for every begun 24 hours of delay.
- 7.5. Late submissions of the FDR of more than 7 days will be penalized with a deduction of 50% of the team's points for the FDR and a score of 0 points for the PDR.
- 7.6. Once a report is submitted it is not possible to hand in other versions. Only the first submission will be scored.

## 8. General Rules

- 8.1. The model-aircraft cannot be removed from the airfield at any time during the flight-competition.
- 8.2. The team is responsible to comply with their starting time or any meetings / briefing times.
- 8.3. Every team receives a 5 minutes time slot (take-off time -5 minutes) for take-off.
- 8.4. The team must take-off during this time slot. If unable to take-off within the slot, the team will be penalized with deduction of 5 points per minute (with max. of 5 minutes) of their flight and will receive a new take-off slot. (see scoring)
- 8.5. Every team also must prepare for the preceding two time slots and must be able to take-off within preceding two take-off times on short notice (take-off time +15 minutes)
- 8.6. If unable to take-off during second slot, the flight of the team will be scored with 0 points.
- 8.7. If a team encounters technical issues during the competition the team captain is allowed to submit a request to have his team placed at the end of the starting order. The request has to be filed at least 15 minutes prior to the teams scheduled starting time.
- 8.8. The jury decides whether the weather conditions are feasible for flight.

## 9. Aircraft

- 9.1. The battery / batteries powering the propulsion unit cannot power any other electrical components. All electronics used during flight (e.g. servos, transmitter etc.) need to be powered by one or more separate battery / batteries.
- 9.2. All electronic components have to be accessible.
- 9.3. A Physical safety switch (circuit breaker) to prevent unintended engine start is mandatory. Two physical safety switches – one for each circuit (propulsion unit & electronic components / avionics) may be used.

## 10. Flight-Event Regulations

- 10.1. Teams are allowed to register a second pilot.
- 10.2. During flight the number of team members in the flight zone is limited to 3 (one pilot, two assistants).
- 10.3. The team's pilot needs to be clearly identifiable throughout the entire flight-event.
- 10.4. There are no tools allowed in the flight zone.
- 10.5. The pilot has to oblige with the instructions of the officials at any time.
- 10.6. If the aircraft is flown above the spectators (leaving the flight zone) the team will be disqualified.
- 10.7. During flight the aircraft has to stay within the visible range of the pilot and the jury at all times and within geofenced area.
- 10.8. 15 minutes prior to the scheduled take-off the aircraft needs to be placed on a designated area, the so called "parc-fermé" and cannot be touched by any team member until asked by the jury to move the aircraft to the marked holding point.
- 10.9. 10 minutes prior to the scheduled take-off the aircraft needs to be moved to the VTOL starting and landing area. The motors must be cut off from any current.
- 10.10. Before placing the aircraft at the holding point, the engines must be still cut off from any current.

- 10.11. At the scheduled take-off slot the aircraft must to take off.
- 10.12. The flight has to be performed according to checklist.
- 10.13. After landing the batteries are removed and handed to the jury. The aircraft is then placed back into the “parc-fermé” where it has to remain until the protest deadline expires.

## **11. Crash of an aircraft**

- 11.1. An aircraft that has crashed during the competition may not be repaired and flown again, because the static and dynamic safety of the aircraft cannot be ensured.
- 11.2. The team members are only allowed to retrieve an aircraft that has crashed after an official permission by the jury.

## **12. Technical acceptance**

- 12.1. The safety check is held the day prior to the scheduled flight-competition.
- 12.2. Any team which intends to participate in the competition has to pass the safety check.
- 12.3. The purpose of the safety check is to ensure safe operation of the aircraft as well as compliance with the rules and regulations of the New Flying Competition.
- 12.4. The jury will check if all electronic components are accessible.
- 12.5. A function test will be carried out to assure the reliability of all crucial functions, via remote control. Cables shall not be exposed to tensile stress. This will be tested with the battery / batteries powering the electronic components only.
- 12.6. The fail-safe mode has to be set in such way, that the engines turn off and the aircraft engages in a pitch-down attitude. The fail-safe mode will be checked during safety check.
- 12.7. A visual examination will be conducted to ensure:
  - the plane is free from cracks and pressure marks as well as any visible damage on the aircrafts structure.
  - given characteristics and dimensions from the data sheet comply with the aircraft.
- 12.8. During safety check a video demonstrating the aircrafts capability of conducting a safe flight needs to be presented to the jury.

## **13. Test run**

- 13.1. The test run will be conducted 1 hour before the first scheduled flight.
- 13.2. The test run requires the team to run their aircrafts engines at full load for 15 seconds. It will be checked if:
  - the power unit generates self-oscillations/resonant vibrations on the aircraft
  - all components have been attached properly
  - power loss is noticeable in terms of uncommon heat generation. If heat is noticeable after 15 seconds, it might lead to complications during flight.

## **14. Forfeit for Non-Appearance**

- 14.1. It is at every team´s own responsibility to attend meetings, events and briefings.
- 14.2. If a team is not present or ready for a scheduled event, it will result a point penalty.**

14.3. Team captains and pilots have to attend every meeting throughout the competition.

## **15. Testing and work safety**

15.1. Competition organizers are not liable for the use of the aircrafts outside of the competition.

15.2. Organizers don't take any liability for the participating teams behaviour during their visit or for any organisational matters apart from the competition.

15.3. All teams are advised to follow common practices and common sense when operating or working on the aircrafts.

15.4. During the competition the aircrafts are not to be used in any ways, other than the competition purposes.

## **16. Guidelines for safety requirements**

16.1. Organizers reserve the right to disqualify teams disrespecting safety guidelines and / or are risking the health of other competitors and / or spectators.

## **17. Onsite working safety**

17.1. Following is a list of safety requirements to be obliged when working on the aircraft on competition grounds:

- **Illegal Substances:**
  - Illegal drugs, weapons or other illegal material are prohibited on the competition site during the competition.
- **Aircraft Movement**
  - Aircrafts are only allowed to be moved with running engines during take-off, flight and landing.
  - Aircraft movement is only allowed with the jury's permission.
  - The aircrafts are to be pushed or carried towards and away from holding point with the engines turned off and the propulsion battery disconnected.
  - Aircraft movement is only allowed on the designated routes.