

REGULATION
on the Procedure for Conducting the “Design of Unmanned Aerial Vehicles” Competition and Determining the Winners within the Framework of Aviation Competitions

Age of participants:

- Main – 16–30 years old
- Team composition – 2 participants

In this competition, participants shall perform the task of extinguishing a fire of a burning house mock-up using a remotely controlled unmanned aerial vehicle (hereinafter referred to as UAV – drone).

The task consists of the following:

- lifting the drone into the air from the crapt platform;
- reaching the area where the house mock-up is located along the designated route;
- extinguishing the fire using water or a special fire-extinguishing capsule;
- after completing the task, safely landing the drone at the designated place.

COMPETITION OBJECTIVES

1. To improve knowledge and skills in the use of unmanned aerial vehicles in emergency situations;
2. To develop technologies for remote fire suppression;
3. To identify innovative, practical and socially significant drone solutions;
4. To increase interest among youth in engineering, robotics and aviation technologies;
5. To determine the “Most Effective Fire-Extinguishing Drone”;
6. To form a reserve of innovative technical solutions for emergency situations.

COMPETITION CONDITIONS

- The competition is held between teams.
- Drones are placed on the crapt platform (diameter 100 cm).
- The fire is presented in the form of a house mock-up, in which real flame or safe flame imitation is used.
- Fire extinguishing is carried out by one of the following methods:
 - o water spraying;
 - o special fire-extinguishing capsule (dropping or placing the capsule).
- The location of the house mock-up and the fire shall be announced on the day of the competition.
- During the route, the drone may pass designated obstacles (1 or more).
- The drone’s fire-extinguishing device must be independently developed by

the participants.

- Serially manufactured drones may be used.

PROCEDURE FOR CONDUCTING THE COMPETITION

- The team's action begins with the referee's signal;
- The operator is not replaced during the route;
- The maximum time for completing the task – 3 minutes;
- If the fire is completely extinguished, the task is considered completed;
- The referees record each stage in the protocol;
- Errors and violations lead to a reduction of points.

REQUIREMENTS FOR THE DEVELOPMENT

| Indicator | Unit of measurement | Value |
|-------------------------------------|----------------------------|-----------------|
| Drone length | cm | ≤150 |
| Drone width | cm | ≤150 |
| Drone height | cm | ≤50 |
| Flight altitude | m | ≤15 |
| Fire-extinguishing payload capacity | g | ≥300 |
| Control system | type | remote control |
| Power source | type | battery |
| Fire-extinguishing mechanism | type | water / capsule |

EVALUATION CRITERIA (100 POINTS)

1. Innovativeness of the idea – 0-15
 2. Degree of effective fire extinguishing – 0-25
 3. Task completion time – 0-15
 4. Stability and safety of the drone – 0-10
 5. Ease of control – 0-10
 6. Compliance of the technical solution with the competition conditions – 0-10
 7. Accuracy of takeoff and landing – 0-15
- TOTAL: 100 points**

This Regulation may be amended no later than 30 days before the start of the competition. The updated Regulation shall, in due course, be provided to all registered participants.

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