

## Overview

Participants will demonstrate their knowledge of drones by participating in **manual** flight missions related to a specified theme area. Teams also study the principles of flight and research the use of drones in a specified theme area to create a **digital research portfolio**. Details about the flight missions and theme area will be posted on the Droneworks website ([www.droneworksite.com](http://www.droneworksite.com)). Semifinalists will be **interviewed** about their digital research portfolio.



- One (1) Pilot
- One (1) Spotter

In a Team of one (1) participant, the individual may serve as both Pilot and Spotter.

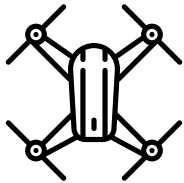
**Team of 1-2 Students**  
**2 Teams per Chapter**

Pilot and Spotter may switch roles during competition.



**Safety Glasses**

**Safety glasses required for ALL participants**



**Drone**

A. With all components attached, drone must not exceed the following dimensions:

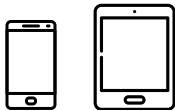
- 9 in (30 cm) width
- 9 in (30 cm) length
- 5 in (13 cm) height

(as measured from the surface the drone is resting upon to the highest point of the drone, with all its components attached)



**Gamepad Controller**

C. Drone weight (with all components attached) must not exceed 3.5 oz (100 g).



**Smartphone/Tablet**  
(Optional)

D. Propeller guards/cage may be used if, once attached, the overall drone size does not exceed the dimensions listed above.

E. A gamepad controller or smartphone/tablet may be used for manual flight.




F. First Person View (FPV) goggles are not allowed.



**No FPV Allowed**

A list of suggested drones is posted on the Droneworks website ([www.droneworksite.com](http://www.droneworksite.com))

## Event Components

Preliminary Round		Semifinal Round
		
Digital Research Portfolio	Manual Drone Flight	Interview

## Procedure

### Digital Research Portfolio (Pre-Conference) (Preliminary Round)



- Participants are given a **theme** related to the use of drones in real-world applications.
- Participants will create a **digital research portfolio** explaining up to three (3) ways drones may be used in relation to the theme.

### Manual Drone Flight (On-Site) (Preliminary Round)



C. Participants are provided a series of designated **flight missions** and point values.



D. More information on the theme and flight missions are available on the [Droneworks website](http://www.droneworksite.com).



E. Participants will complete the missions **manually**.



**1-min**

F. Participants will have a **one (1:00) minute** attempt to complete flight missions **manually** to score the most points.



**x3**

G. All participants will be given **up to three (3) attempts** of manual flight to achieve their best score by completing the flight missions.




H. The **preliminary round score** from the digital research portfolio and top two (2) manual flight attempts will determine the **twelve (12) semifinalists**.

### Semifinal Interview (On-Site) (Semifinal Round)



I. Semifinalists participate in an on-site **interview** about their digital research portfolio. The **top ten (10) finalists** will be announced at the conference awards ceremony.




## Digital Research Portfolio

(Pre-Conference)


**40**  
points

Create a **digital research portfolio** illustrating and explaining **up to three (3) ways drones may be used** related to the given theme.




Digital Research Portfolio (PDF)

- A. Digital portfolio must be submitted as a **multi-page PDF**.
- B. Portfolio must include the following, single-sided, 8 1/2" x 11" pages, in this order:
  1. Title page with the event title, conference city and state, the year, and the team/chapter ID number; one (1) page
  2. Table of contents; one (1) page
  3. Theme Research Description(s); two (2) pages
  4. Research Bibliography; one (1) page
- C. Any photographs or digital media used must be properly credited in Research Bibliography.

 **Ratings Criteria**

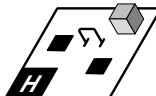
- Theme Research
- Layout and Design
- Illustrations/Photos
- Research Bibliography



## Manual Drone Flight


**120**  
points


To challenge the participants' **manual** flying skills, teams pilot their drone through various **theme-based missions**. Teams attempt to complete missions and score the most points within **one (1) minute**.

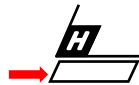



1. Theme-based missions are released on the [Droneworks website](#)

**During the Competition**

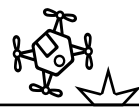
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2. At the **hot table**, participants power up their drone and connect it to their **Drone Control System**.
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3. Only one (1) team at a time competes within the airspace.
- 


4. The **pilot** stays outside the airspace and controls the drone from within the **pilot area**.
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**3, 2, 1, Go**

5. The **spotter** places the drone on the **landing pad**. An attempt begins with a countdown.
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6. The **spotter** remains outside the airspace unless the drone **stops**, but may retrieve it and return it to the landing pad for **additional flights**.
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**1-Min. Manual Attempt**


7. Participants will have a **one (1:00) minute** attempt to complete flight missions **manually**. **The timer never pauses.**
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8. After an **attempt**, a judge discusses what happened, mission by mission. If the **team** agrees with everything, they sign the **score sheet**.
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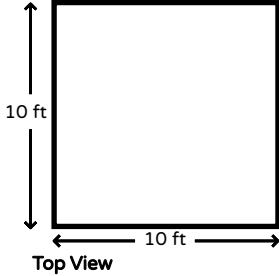
**x3**

9. Participants will be given **up to three (3) attempts** to achieve their best score by completing the flight missions.
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10. The **preliminary round score** from the digital research portfolio and top two (2) manual flight attempts will determine the **twelve (12) semifinalists**.




## Airspace



Top View


The airspace is the area where the drone flies. It is an area 10 ft. long x 10 ft. wide. It also has a virtual ceiling of 10 ft. Netting is hung to isolate the drones from spectators.



## Semifinal Interview

**40**  
points

Semifinalists participate in an on-site **interview** about their digital research portfolio. The **top ten (10) finalists** will be announced at the conference awards ceremony.

 2024 Droneworks: High School Event Guide for Oklahoma TSA

[www.droneworksite.com](http://www.droneworksite.com)