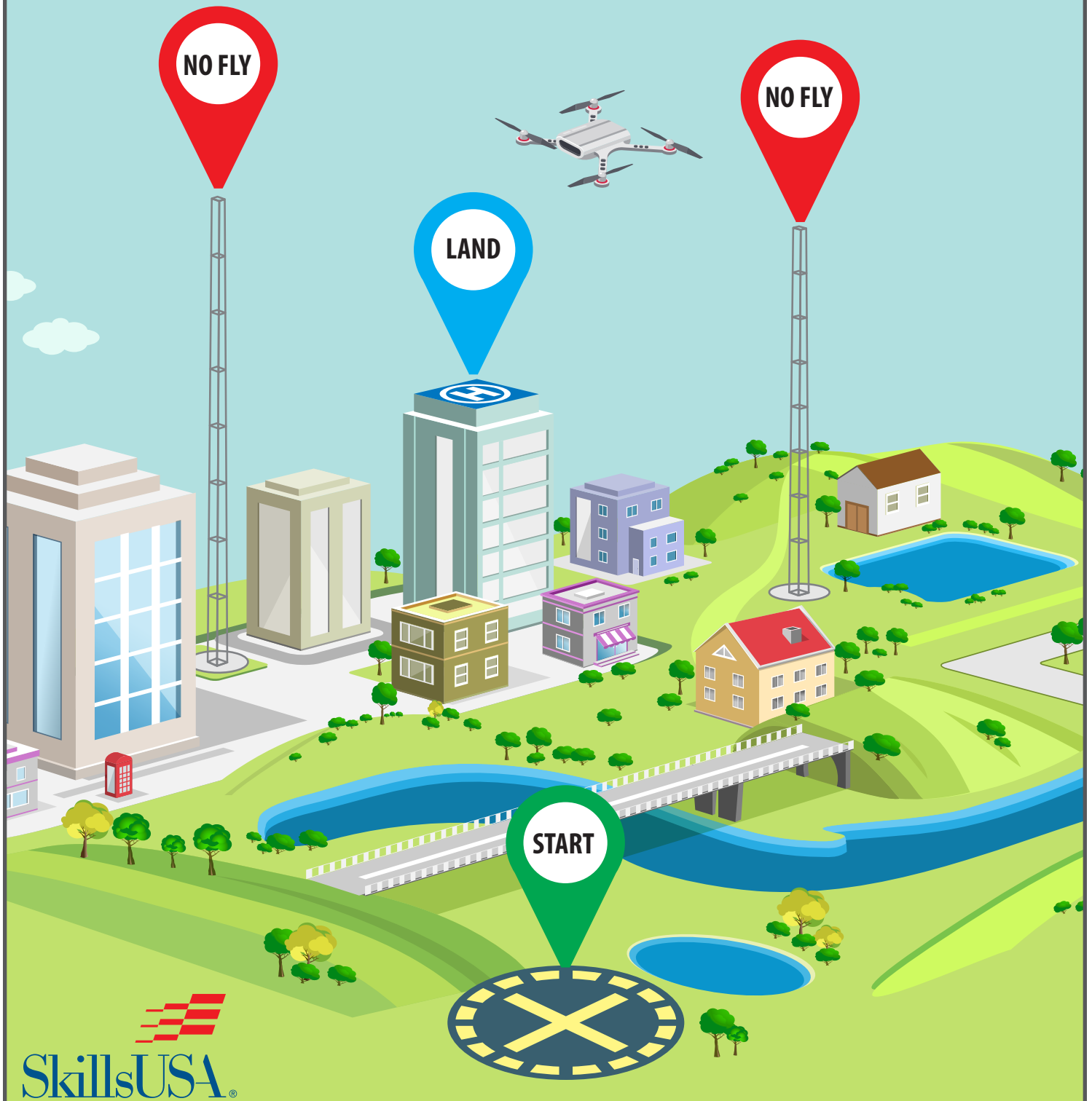


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# Commercial sUAS (Drone) Competition



  
SkillsUSA®

  
CROSSFLIGHT  
SKY SOLUTIONS

  
PITSCO  
EDUCATION

 MINDS-i

 **UF** Herbert Wertheim  
College of Engineering  
Department of Materials Science  
& Engineering  
UNIVERSITY OF FLORIDA

## INTRODUCTION

### Purpose

To evaluate team members' skills and preparation for employment in multiple career fields related to the safe and efficient use of drone technology in the National Airspace System and to recognize outstanding performance by participants in real-world, scenario-based situations.

### Eligibility (team of 2)

#### Equipment and Materials

- Supplied by Technical Committee
  - Arenas and course materials will be provided by Pitsco Education and MINDS-i.
  - Drones for flight competition will be provided by Pitsco Education.
  - Drones for Engineering Design, Build, Repair, and Commission will be provided by MINDS-i.
  - Computer equipment for FAA testing portion of event will be provided by TBD.
  - Software logins will be provided by service providers or CrossFlight Sky Solutions for competition only.
- Supplied by the team:
  - Eye protection (always required in the contest area)
  - Laptop computer equipment with any software not provided by SkillsUSA® that the team desires to utilize. It will be used for presentation creation, processing, programming, and so on.
  - Official SkillsUSA polo/uniform

#### Skills/Competencies to Be Tested by the Contest

- Students can prove knowledge and understanding of FAA regulations.
- Students can safely plan and both manually and autonomously fly a small Unmanned Aircraft System (sUAS – drone) and collect usable data as required.
- Students can store, organize, and deliver/communicate data in an acceptable manner based on industry standards.
- Students can demonstrate and document a valid sUAS operational cycle.
- Students can demonstrate ability to utilize the design process and accurately document the design process in an engineering notebook.
- Students can utilize knowledge of unmanned aircraft systems to design, build, repair, program, and operate a sUAS.
- Students can conduct environment mapping and event-related object searching.
- Students can acquire and relocate objects.
- Students can perform detection avoidance of acquired objects.

#### Academic Skills Expected of Competitors in this Contest

- Presentation and communication; programming and flowcharts; engineering design; technical literacy; critical thinking and problem-solving; spatial orientation; accessing and analyzing information; situational awareness; agility and adaptability; safety and social responsibility; environmental awareness; systems thinking; innovation and creativity; attention to detail; applied mathematics; applied science; emotional intelligence

### Contest Guidelines

- Teams must be composed of two students.
- All drone equipment will be provided; no outside materials will be allowed on-site.
- After the mission is communicated via the orientation briefing, team members will have a set time to complete multiple tasks and missions.
- Hot zones are areas the teams are not allowed to fly in. Touching these areas will result in a penalty.
- Team members will always be required to follow proper safety procedures and use eye protection in the contest area.
- Teams must bring a computer to the pit area.
- During the mission, the pilot must stay within the designated command area while the spotter can move freely in designated areas around the perimeter of the arena.
- All teams will be expected to adhere to the official rules for the drone competition.
- There will be no outside materials or resources allowed in the knowledge testing area; all needed materials will be provided.

### State-Level Implementation

**What companies or organizations should be approached in the near future to provide volunteers, contest equipment, and/or place winner prizes for a demonstration contest at the national SkillsUSA Championships?**

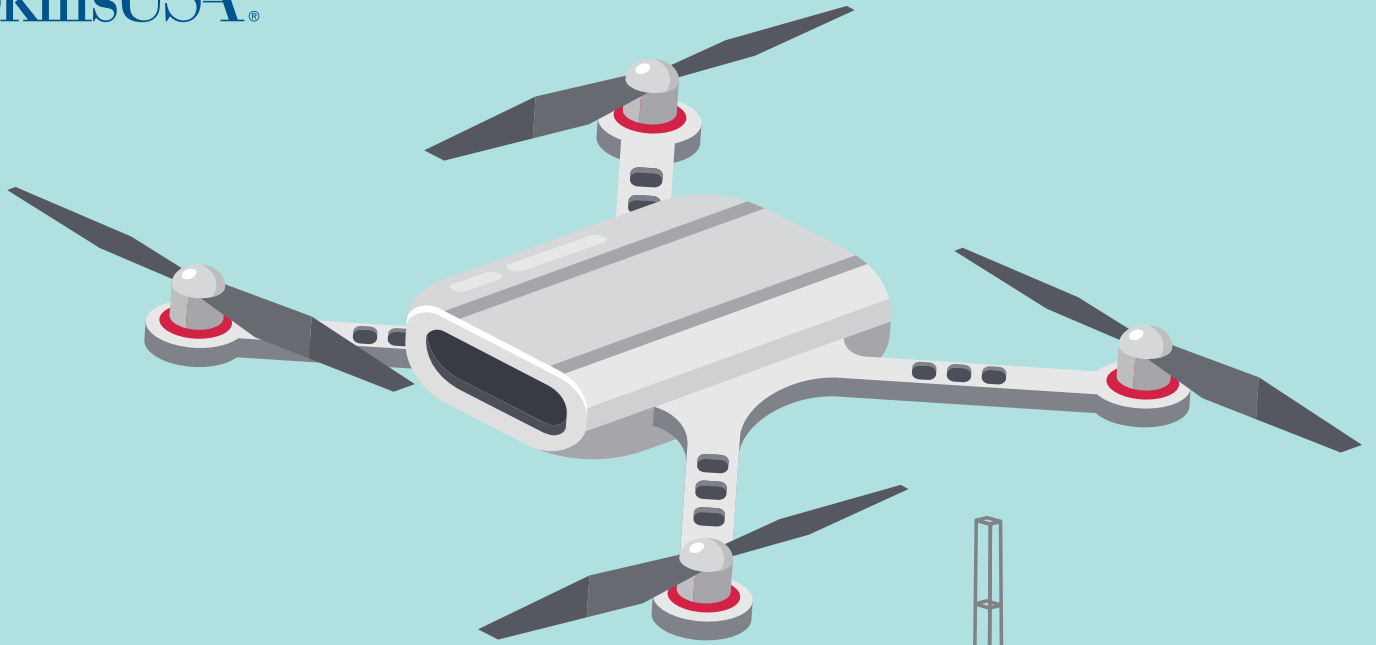
- Skyward.io (Verizon)
- FAA
- FAA Safety Team
- Pix4D
- DroneDeploy
- DJI
- Autel Robotics
- Parrot
- Drone Nerds
- Boeing
- Amazon Prime Air
- AUVSI
- UPS
- Duke Energy
- Florida Power & Light
- State departments of transportation
- Major construction corporations
- Major railroads

### **Where can SkillsUSA state directors procure volunteers, contest equipment, or prizes for a state-level contest?**

- State FAA FISDO office
- State/local sUAS/drone service providers
- State/local law enforcement/public service with sUAS/drone programs
- State/local industry utilizing sUAS/drone technology
- State/local agriculture organizations (such as FFA)
- State/local civil air patrol
- Federal military air stations (consider all branches of the military)
- State/local airports
- Local robotics/aviation clubs

### **Companies/organizations committed to providing volunteers and equipment to conduct a demonstration contest at the state and national SkillsUSA Championships:**

- Pitsco Education
- MINDS-i
- CrossFlight Sky Solutions
- University of Florida



**HAVE QUESTIONS?**

Email us at [skillsdrones@pitsco.com](mailto:skillsdrones@pitsco.com).

