



ROBOTICS EDUCATION &
COMPETITION FOUNDATION
SUMMIT

AERIAL DRONE PROGRAM





OUR MISSION & VISION



Our Mission

The Robotics Education & Competition (REC) Foundation's global mission is to provide every educator with competition, education, and workforce readiness programs to increase student engagement in science, technology, engineering, math, and computer science.



Our Vision

We see a future where every student designs and innovates as part of a team, overcomes failure, perseveres, and emerges confident in their ability to meet global challenges.

Aerial Drone Competition

Meet Our Team

We are here to support
you in our Drone Competitions!
Contact us at drones@recf.org to get started.



Nadine Amaya

West and South Central Regions



Shelli Brasher

North Central and Southeast Regions



Louann Cormier

Northeast Region



Lisa Schultz

International Regions



Logan Schreier

Full-Stack Web Developer



Kate Simmons

Development Manager



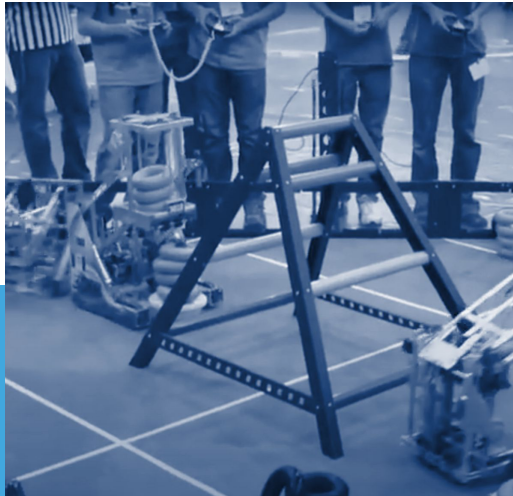
History of the REC Foundation and the Aerial Drone Competition

About the REC Foundation

2010

Founded

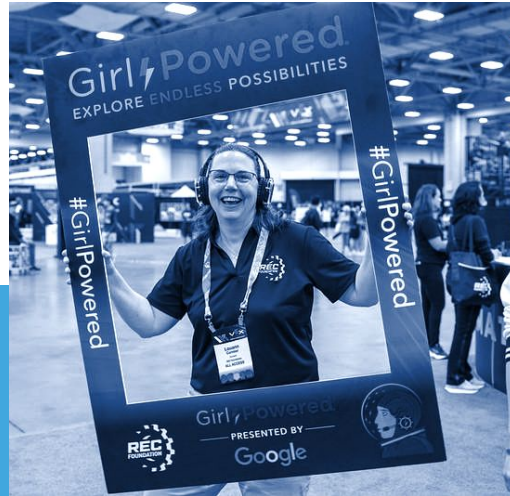
Articles of Incorporation
as a 501c3 signed in
April of 2010



107

Employees

107 Employees in 36 US
States and Australia, Canada,
China, and United Kingdom



1,740

Event Partners

1,740 Event Partners hosted
workshops, scrimmages,
camps, and competitions this
past season



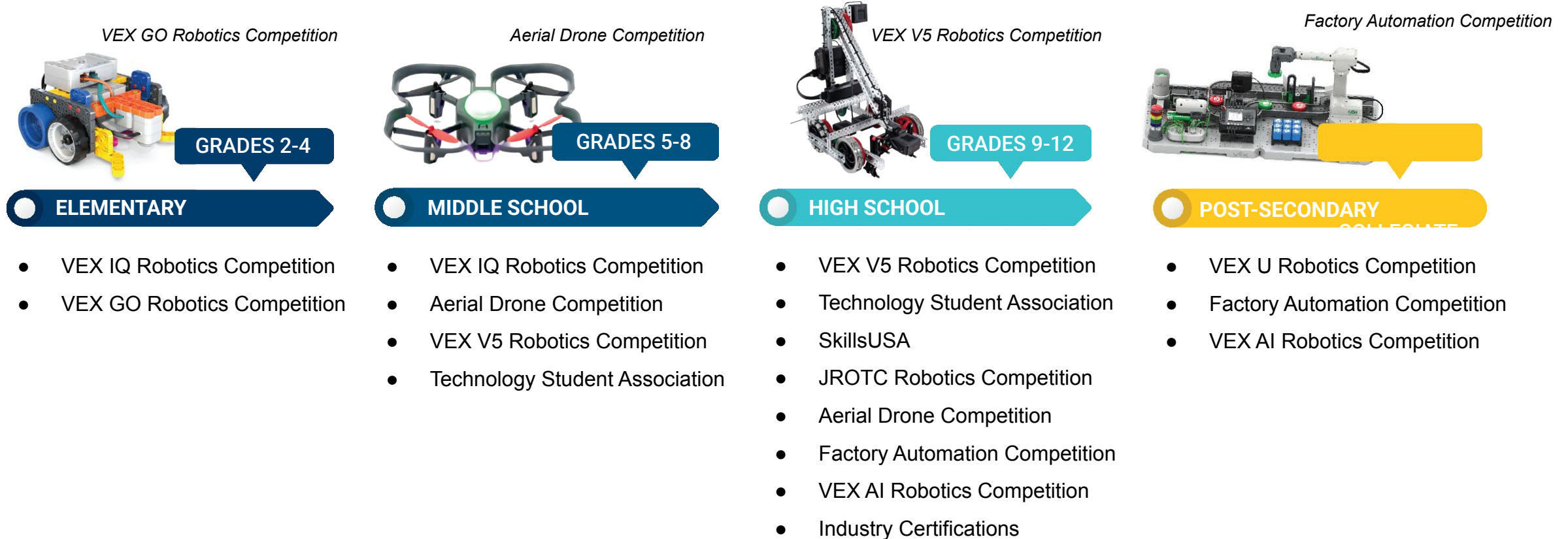
26M

Volunteer Hours

Over 26 million hours are
invested by our volunteers
annually



STEM Education Continuum



2019 –2020 Pilot Year Visual Line of Sight

(season ended early)

- Program called RADC (REC Foundation Aerial Drone Competition)
- Played on a full basketball court - Timed Racing Challenge



**2020–2021
(Year of Pandemic)**

- Played on a full basketball court - Introduced 2 alliance structure
- Very Limited Season



2021–2022

- Field made smaller 24 x 24
- First FULL season with an 80-team Championship at VEX Worlds
- Inventory (due to chip shortage) was non-existent and prohibited growth





2022-2023

- New Drone Partner (Robolink) and New Field Element Partner (Drone Competition Gates)
- Changed name to **Aerial Drone Competition**
- Focus on making a challenge, so all three team members must do something. It's not a Race, but a challenge.
- Introduced the Blackout Curtain requiring a visual observer
- 2V2 tournament play similar to VRC
- 4 Regional Championships!



MISSION 2024 **ECLIPSE** 2023-2024



- **Dedicated Autonomous Flight Layout** – Designed to use sensors of the CoDrone EDU and increase programming success. Specially designed mats will be placed on sections of the floor to aid in setup and consistent sensor readings.
- **Piloting Skills Challenge** – One Drone - One Team - Pilot your drone around an obstacle course to show off your piloting skills.
- **2 v 0 Teamwork Challenge** – Designed for two teams to work together and highlight precision flying skills, communication, and decision making.
- **Alliance Selection** and bracketed Finals Playoffs.
- **Easier Setup** – PVC is only required on Teamwork Challenge fields.
- **Updated Rubrics** – More focus on drone flight, drone programming, flight safety, and communication.

- **Challenges with Higher Difficulty** – Game Design offers task challenges of varying difficulty to welcome new pilots and challenge returning teams.
- **Updated Award Names to better reflect Missions** – All-Around Champion, Communications Mission Champion, Judges Award, Coding Award, and Airmanship Award
- **Updated Rubrics** – More focus on aviation terminology, drone flight principles, drone programming, flight safety, and communication
- **Drop the lowest Teamwork match score** - New Rule added: The lowest score will be dropped after 6 teamwork missions.
- **Autonomous Flight Mission Reset** - One reset of the drone during the mission to give teams the opportunity to complete more autonomous flight tasks and encourage more coding.
- **REC Library Resources** – Total revamp of library articles
- **New Certification Courses** – Coach, Event Partner, Judge, and Head Referee Certifications
- **Expanded Globally** - 2 US Territories (American Samoa and Northern Mariana Islands) and 4 Countries (Canada, Mexico, Kuwait, and Greece)



MISSION 2025
GRAVITY
2023-2024



The Numbers



Teams

- 381 Teams
- 134 Organizations
- 28 States

Events

- 21 Event Partners
- 24 Events
- 14 States

1 Championship Event



Teams

- 949 Teams
- 336 Organizations
- 37 States

Events

- 58 Event Partners
- 80 Events
- 27 States

4 Championship Events



Teams

- 1546 Teams
- 534 Organizations
- 42 States

Events

- 101 Event Partners
- 154 Events
- 35 States

6 Championship Events



Teams

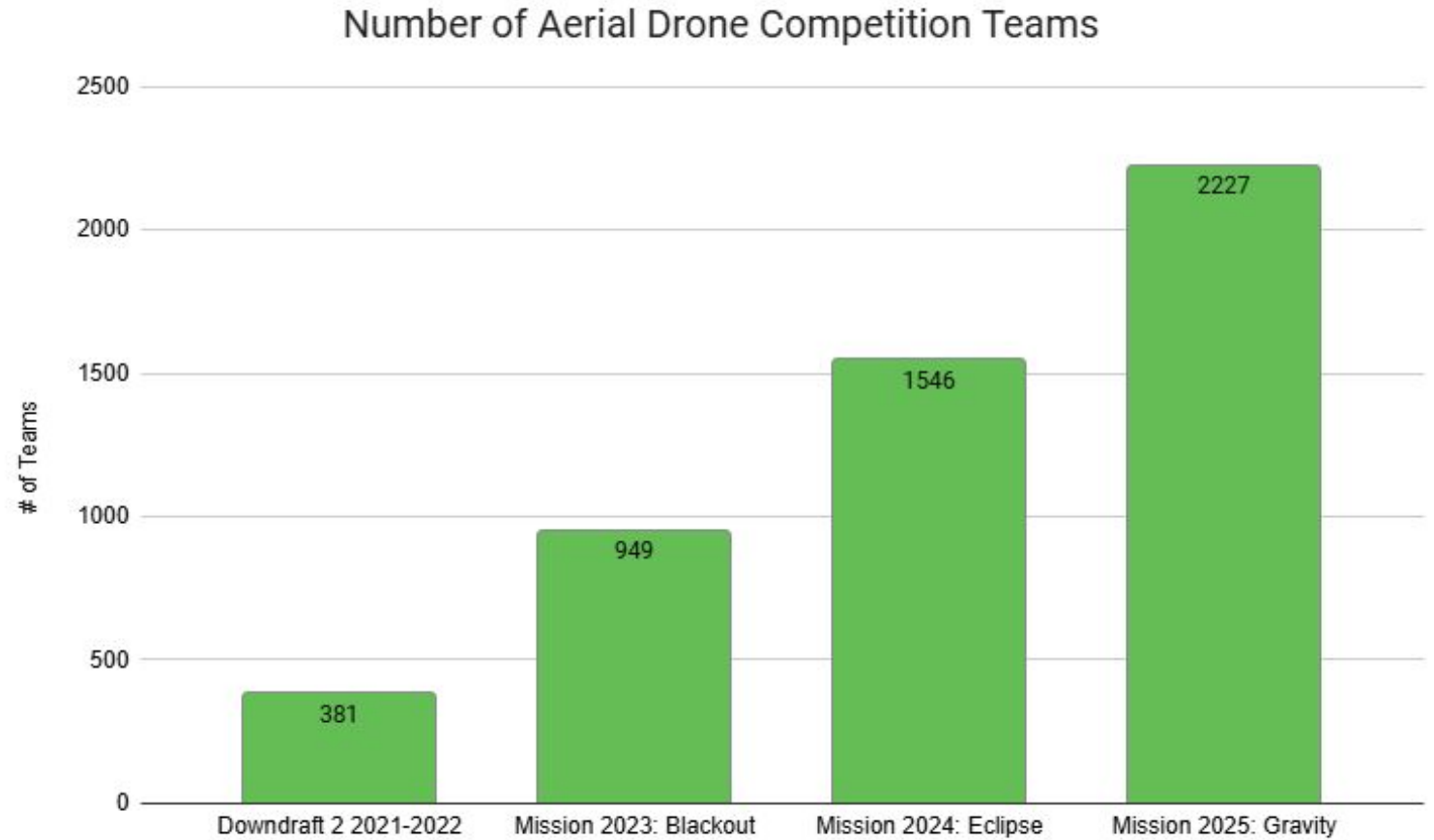
- 2227 Teams
- 913 Organizations
- 49 States
- 2 US Territory
- 5 Countries

Events

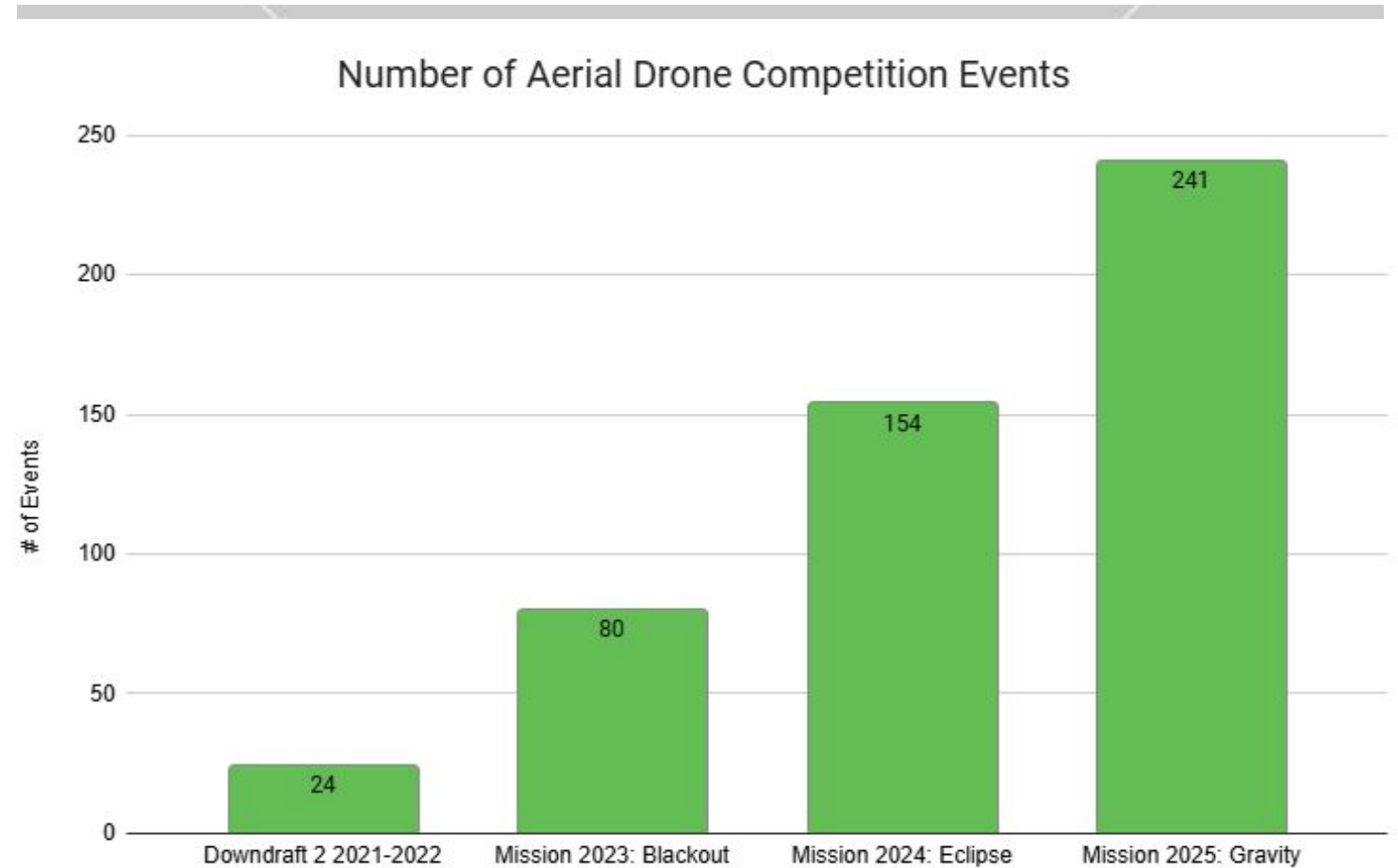
- 145 Event Partners
- 241 Events
- 39 States
- 1 US Territory
- 4 Countries

11 Championship Events

Aerial Drone Competition Teams



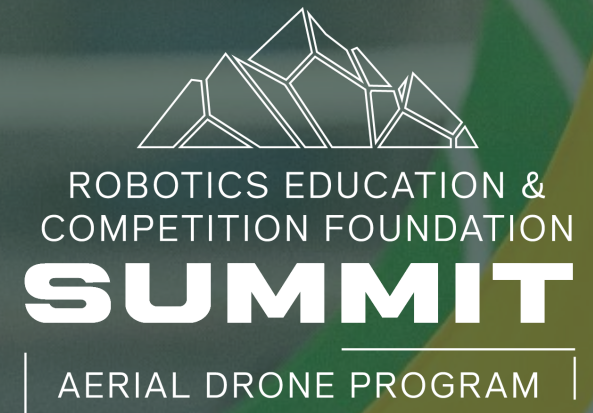
Aerial Drone Competition Events



So What's Next?

Introducing **ADC Pro:**

**Our Aerial Drone Competition Program is
expanding to offer even more challenging and
rewarding opportunities for high school students.**

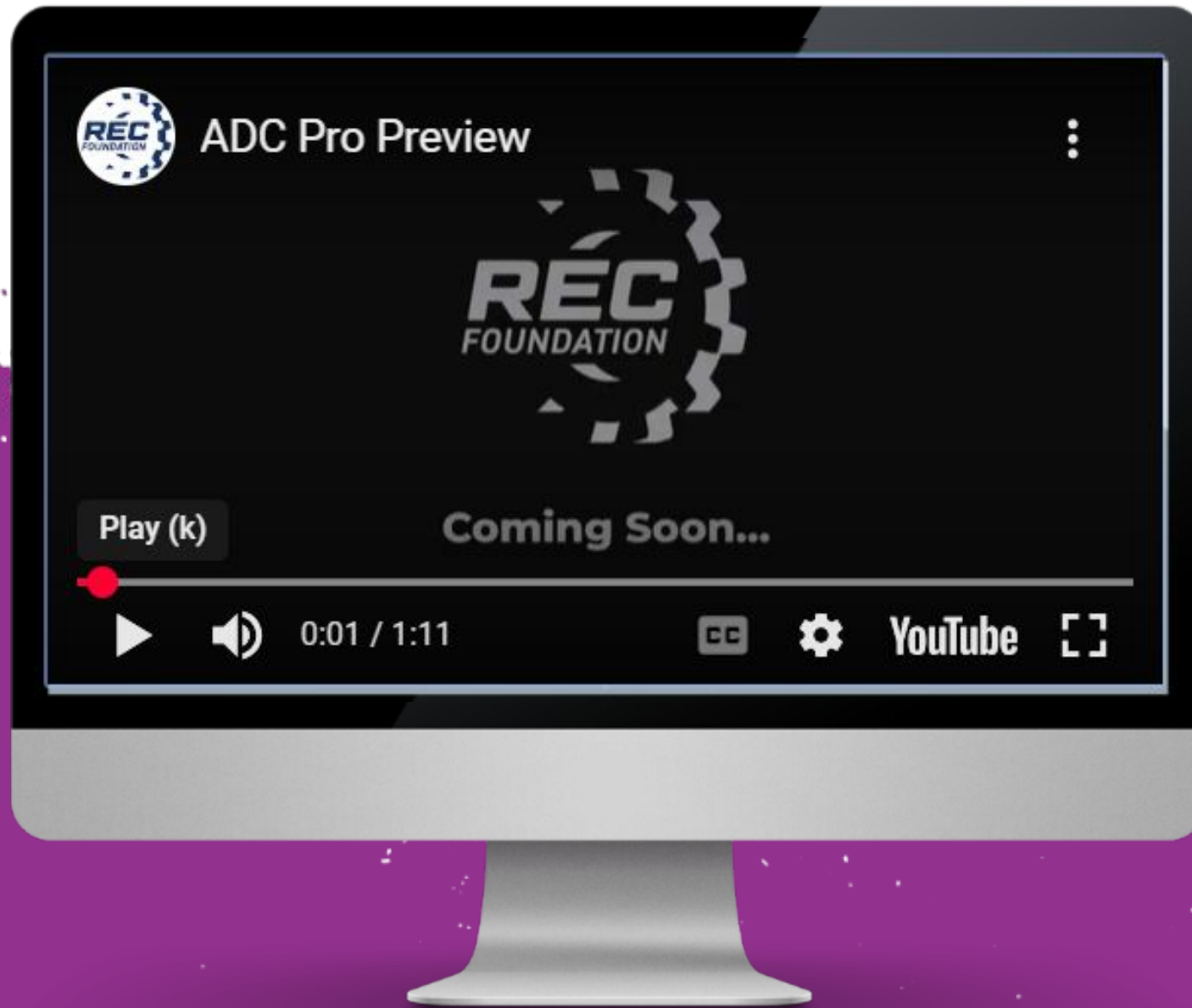


INTRODUCING AERIAL **DRONE** COMPETITION **PRO**



Quick Facts

- **Target Audience:** High School Students (Ages 13+)
- **Team Size:** 3–6 students per team
- **Competition Vehicles:**
 - MINDS-i Competition Drone Kit
 - CoDrone EDU
 - MINDS-i Ground Robot (or equivalent)



FUTURE INNOVATORS ON THE RISE

Raising the bar through competition

4 Missions - 1 Competition

Students compete in local and national events. Competitions are recommended for high school students ages 13+.



Teamwork Mission

Two Alliances composed of two Teams each, compete to attain a higher score than the opposing Alliance in matches on a divided field using the MINDS-i Competition Drone and Land Vehicle.



Autonomous Flight Skills Mission

The CoDrone EDU drone and the Land Vehicle are programmed by students to operate entirely autonomously. Each team competes alone to score as many points as possible.



Piloting Skills Mission

The CoDrone EDU drone is piloted by students to fly through an obstacle course. Each team competes alone to score as many points as possible.



Communications Mission

Teams interview with Judges about their Drones, Programming, Design, Strategy, and Competition Notebook.

The Highlights

Skill Development Focus Areas:

- Drone technology and precision flight principles
- Engineering design and mechanical integration
- Communication, collaboration, and strategy
- Real-world workforce skills related to drone industries

Integrated Multi-Vehicle Strategy:

- Teams will use multiple drones and a land-based robot
- Collaboration and coordination is required to complete tasks and outperform opponents
- Strategy, adaptability, and teamwork are key

What Makes This Program Different?

- Higher-level competition elements (2v2)
- Opportunities for mechanical design & 3D printing
- Advanced coding and autonomous programming, including Machine Learning
- Multi-vehicle coordination: aerial + land



BE PART OF THE FUTURE

Shape What's Next

Discover What's Next for the Aerial Drone Competition Pro

This session is for you if you want to:

- **Get an inside look at ADC Pro**
 - Learn from beta teams and developers
- ☒ **Explore pilot and feedback opportunities**
 - Learn how to get early access and participate in shaping the program
- ☒ **Co-create a meaningful, career-connected student experience**
 - Share your voice and help guide what comes next

Session Title: *ADC Pro: Beta Test Results & What's Next*

📍 Hear from the field. Contribute your voice. Shape the future.

✈️ ***Don't miss your chance to be part of the next evolution of the Aerial Drone Competition!***



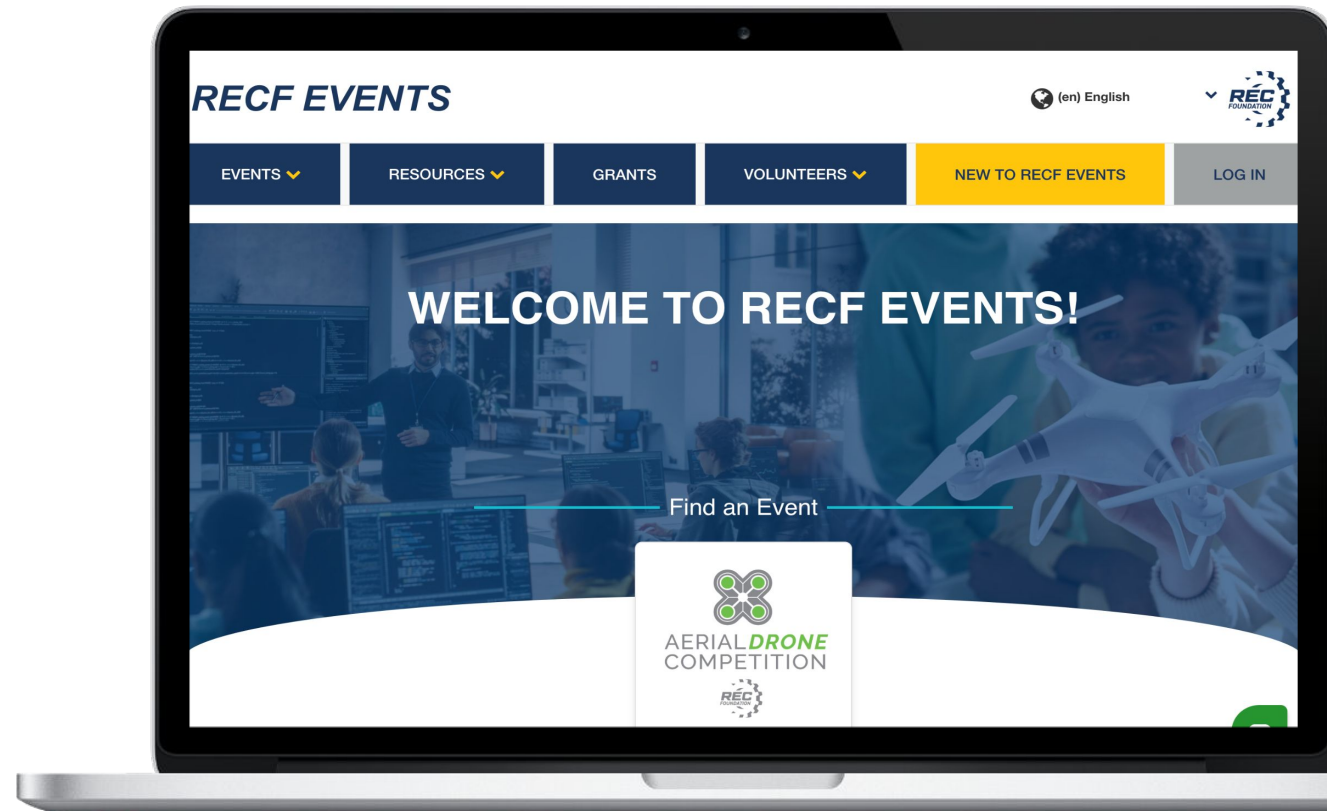


Investing in the Future: RECFevents.org

RECFevents.org

Integrated web application for team registration, event registration and the Competition Portal.

- Development started in 2024 for RECF programs to ensure long term stability of the ADC Program
- New features to improve the user experience, for example EP Payments
- Includes almost all of the functionality except for:
 - Integrated Q&A
 - Leagues
 - Grant Application Processing



RECFevents.org

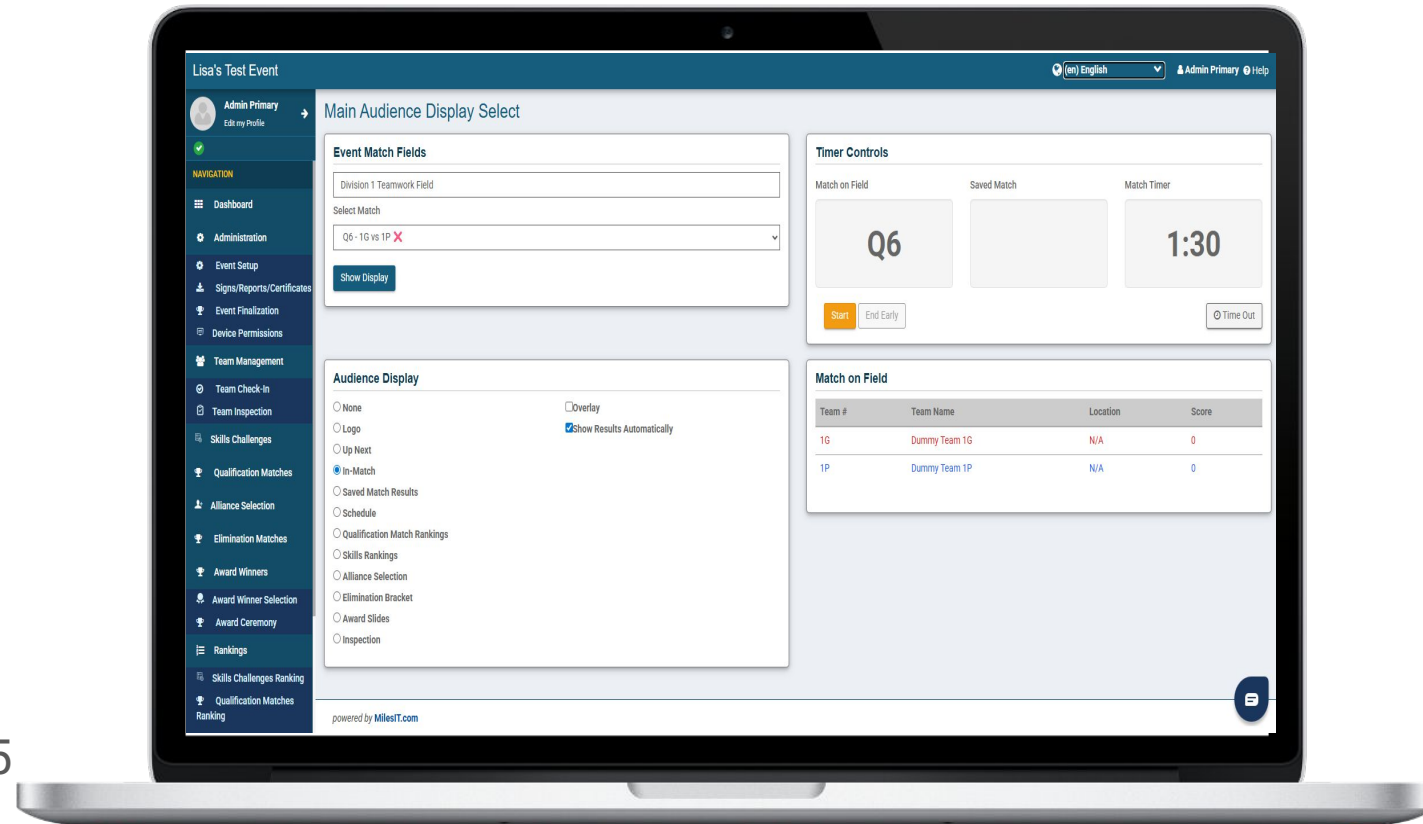
**COMING FALL 2025:
RECF Mobile App**


Competition Portal

- Updated user interface
- Cloud-based - no software to download
- Works on any device with a browser
- Devices do not need to be on the same network

More detailed information will be included in the two Breakout Sessions.

- Join us today during Block 1 or 2
 - to learn how to Create Your Event.
- Join us on Wednesday during Block 4 or 5
 - to learn how to Run Your Event.





Aerial Drone Competition Mission 2026 Updates

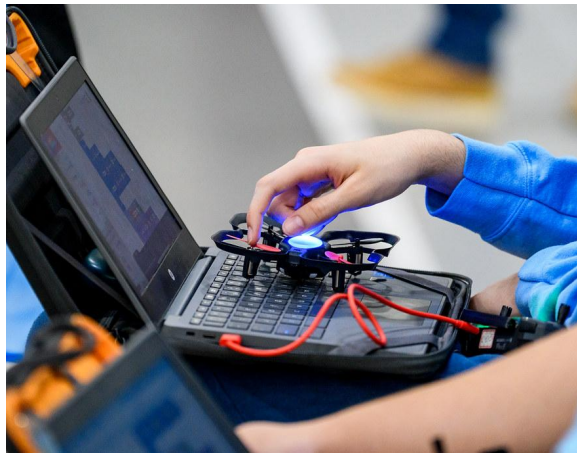
What's new this season?

- ⦿ Autonomous Flight Skills Mission format
- ⦿ Piloting Skills Mission number of matches
- ⦿ PVC Perimeter layout - Teamwork Mission
- ⦿ Double Qualifications at an event include Judged Awards
- ⦿ Global Skills Rankings Algorithm



New for 2026

Aerial Drone Competition



Autonomous Flight Skills

3 Matches

3 Minutes

Unlimited Resets from starting position during each match



Piloting Skills

3 Matches

1 Minute Each



Field Perimeter

The PVC field will feature a new shape. Event Partners must clearly mark Pilot and Visual Observer Stations using tape, cones, or rope. Setup details will be provided in the Competition Manual.



New for Mission 2026: Updated Process for Double Qualifications

If a team earns multiple qualifying awards at a local qualifying event (i.e., double qualifies), their additional qualification spot will be passed down to the **next team on the award list** who has not already earned a qualifying spot at that event.

The order of award consideration for reallocation is as follows:

1. Skills Missions Champion
2. Communications Mission Champion
3. Coding Award
4. Airmanship Award
5. Judges Award



New for Mission 2026: Updated Process for Global Team Rankings

In addition to local event rankings, the REC Foundation (RECF) also maintains **Global Team Rankings** based on performance at a single event.

Global Score Calculation:


- Top Autonomous Flight Skills Match
- Top Piloting Skills Match
- Average of Top 4 Teamwork Qualifying Matches

These three components, all from the same competition, are combined to determine the teams' score for the Global Ranking.



Championship Discussion

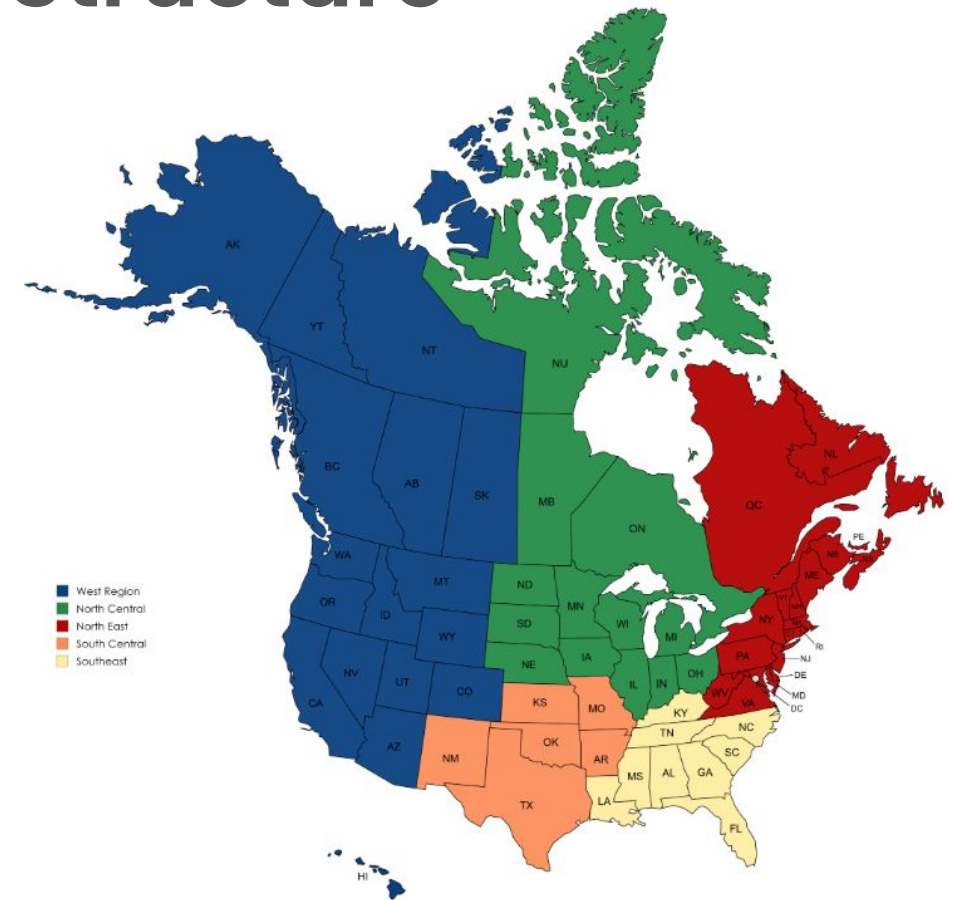
Championships – The Why

- **Celebrate Achievements:** Recognize student accomplishments at regional levels.
 - **Provide Motivation and Goals:** Offer teams milestones that encourage students to improve throughout the season.
 - **Promote Real-World Skills:** Simulate real-world pressure and deadlines to develop teamwork, leadership, adaptability, and time management skills.
 - **Foster Community and Collaboration:** Bring together students from different geographic locations to promote networking and inspiration.
 - **Showcase Educational Impact:** Provide visibility to programs for schools and sponsors to demonstrate student impact.
- 

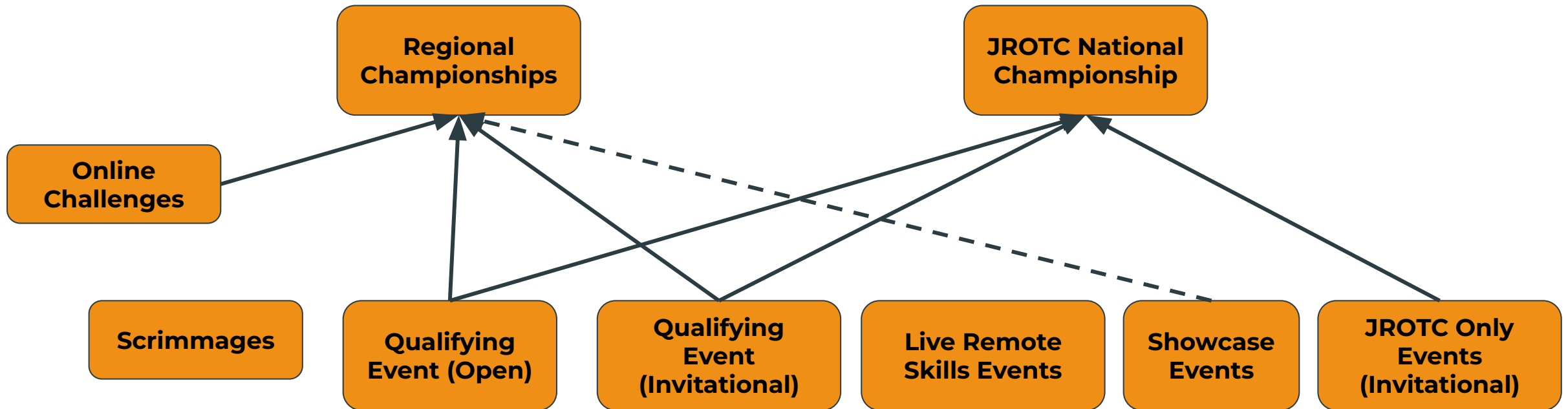
Current ADC Championship Structure

- Event Regions
 - West Region
 - North Central Region
 - North East Region
 - South Central Region
 - Southeast Region
- New last season
 - Greece
 - Kuwait
 - Mexico

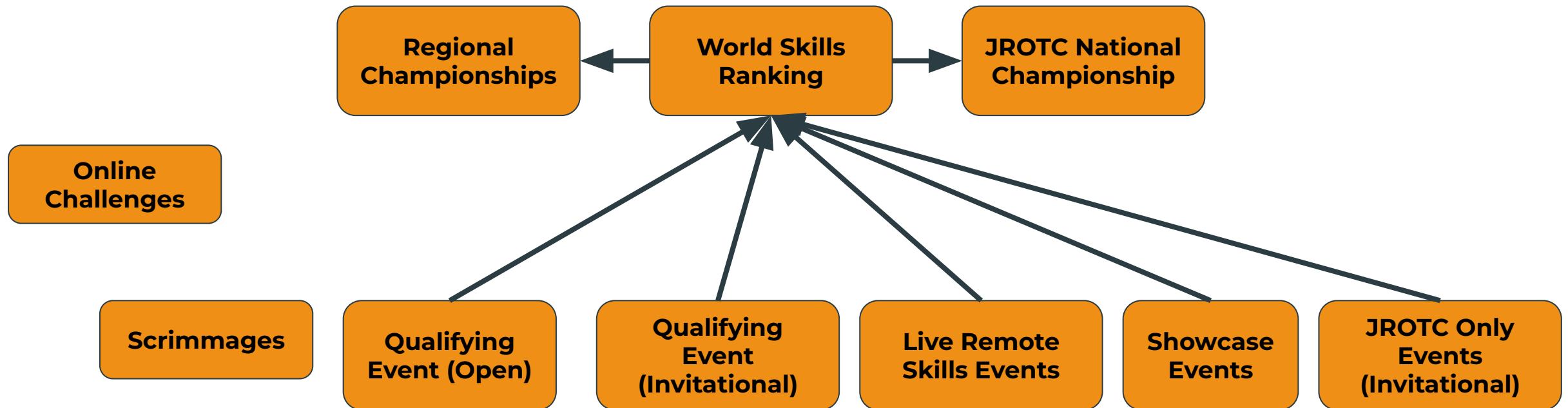
Each Event Region hosts 2 Regional Championships
(Middle School & High School)



Qualifying to a Championship



Filling Championships from World Skills Ranking



Championships

Why culminate at Regional Championships Instead of a World Championship?

- **Greater Accessibility**
More students get the opportunity to qualify (target to qualify 20-30% of teams in Event Regions)
- **Extended Competition Season**
Adds 5-6 weeks (or more) for qualifying events
- **Reduced Costs**
Lowers travel & event registrations expenses for teams and families
- **Supports the ADC Mission & Vision**
Fulfills the goal of meaningful and challenging experiences for students
- **Efficient Use RECF Resources**
Focuses on most impact for student access and event quality



Championship Challenges

- **Requests for a higher-level event for teams from multiple Event Regions**
 - New for 2025-26: ADC Signature Events
- **Requests for other types of culminating events:**
 - School District Championships
 - JROTC Service Level Championships & Brigade Level Championships
 - State or Multiple State Championship (smaller than an Event Region)
- **International Participation**
 - Non-US teams interested in competing in US-based Regional Championships

Contact

We are here for you

If you need any further information about our drone program, one of our staff members will be able to assist you. You can contact us via email or phone, and our team will be happy to help. Additionally, you can visit our website for more details.

Address

1519 Interstate 30 West
Greenville, Texas 75402

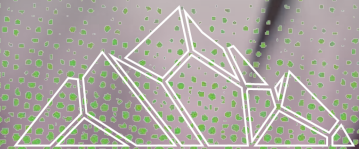
Phone & Email

903 401 8010
drones@recf.org

Website

drones.recf.org

Resources



ROBOTICS EDUCATION &
COMPETITION FOUNDATION

SUMMIT

AERIAL DRONE PROGRAM