



Canada's National Student Unmanned Aerial Systems (UAS) Competition to Resume Virtually in April 2021

Unmanned Systems Canada / Systèmes Télécommandés Canada (USC-STC) is pleased to announce the 12th national Student UAS Competition will be held virtually from April 30 to May 30, 2021.

Due to the COVID 19 pandemic, the flying phase of the 2020 competition had to be postponed. The scenario for this year remains the same as 2020 which unfortunately, has become more relevant, as students must deliver medical supplies from a clinic to remote communities not easily accessible by road. This competition will be the first time students have the option to incorporate an unmanned ground vehicle (UGV) to support unmanned aerial vehicle (UAV) delivery.

USC-STC is the national industry association representing the rapidly growing ecosystem of drones, remotely piloted, unmanned and robotic vehicles. USC-STC and its Student UAS Competition Committee will build on successes of 11 previous events that provide post-secondary students from across Canada with the opportunity to address practical, real-life challenges requiring strong teamwork skills and innovative solutions. These competitions are a key aspect of USC-STC's commitment to:

“Promote and develop Canadian expertise and experience in unmanned systems technologies at the university and college levels.”

Details of the 12th National Student UAS Competition

The requirements for the Phase 1 design paper have been modified to accommodate new teams and the creation of a new task for returning teams. Other than going virtual, Phase 2, the operational component, has not changed. All details are outlined in the [Concept of Operations \(CONOPS\) document](#) posted on the USC-STC website [Student Competition Details](#)

The competition takes place in two phases:

- Phase 1A Design Report for new teams and Phase 1B Performance Report for returning teams were due on January 12, 2021.
- Phase 2 Operational Demonstration takes place virtually April 30 to May 30, 2021.

Teams will be graded on the quality and completeness of their design reports and the results of their flight demonstrations. Prizes will be awarded for each phase and for notable team accomplishments.

The Scenario

There is a medical emergency facing remote communities in Manitoba! The company running the medical clinic network needs the rapid response capabilities of an Unmanned Aerial Vehicle (UAV) to deliver critical medications and supplies from their depot to a drop-off point to communities inaccessible by road. Teams representing 10 universities from across Canada are registered to design an Unmanned Aerial System (UAS) that uses an unmanned aerial vehicle (UAV) and the option to include an unmanned ground vehicle (UGV) to support the operation.

This is a Beyond Visual Line of Sight scenario. Although the UAV will be required to go Beyond Visual Line of Sight (BVLOS), spotters will have the aerial vehicle in sight at all times.

Real World Applications

Rapid response times and the ability to travel routes and distances not easily accessed by conventional method make Unmanned Aircraft Systems (UAS) a promising solution to deliver medical and emergency supplies. Applications for medical deliveries include shuttling biological samples between facilities for testing, delivering medication to the homes and hospital rooms of patients, and reaching individuals in need of life-saving medical attention sooner than by ambulance. The possibilities Unmanned Systems provide to the future of the healthcare industry have the potential to enhance responses and services that can save time, resources and lives!

These applications are currently being tested in Canada and implemented across the world, from local emergency medical services teams remotely delivering defibrillators to individuals in cardiac arrest to delivering pharmaceuticals like Naloxone, insulin and epinephrine to patients in distress. Canadian organizations such as Renfrew County Paramedics, InDro Robotics, Drone Delivery Canada, London Drugs, and Canada Post are hard at work applying these technologies to deliver medical supplies to Canadian locations.

Purpose of the Competition

The purpose of USC-STC's national competition is to promote and develop Canadian expertise and experience in unmanned systems technologies at the university and college levels. Even small scale unmanned vehicles are complex systems requiring a well planned and executed design and rehearsed operational approach. In addition, safety considerations are important factors in this competition as in any other vehicle design project.

Typically up to 15 teams from universities, colleges and poly-technical institutes across Canada compete each year. Due to class and project restrictions imposed by COVID-19, 10 teams are able to compete in 2021.

[Click here](#) or search **USC-STC's Student UAS Competition 2019** on YouTube for highlights of a previous challenge presented to students - to conduct aerial inspections of solar panels damaged by a wind storm.



2021 Teams

Carleton University - Blackbird

École de technologie supérieure - Dronolab

Ryerson University - RUAV

University of Alberta - UARG

University of British Columbia - UBC UAS

UBC Okanogan – UBCO Aero

University of Manitoba - UMUAS

Université de Sherbrooke - VAMUdeS

University of Toronto – UTAT UAS

University of Waterloo - WARG

Links to view the competition will be available on the USC-STC website, Twitter, Facebook and LinkedIn pages.

Sponsorship Opportunities

Thanks to the enthusiasm and support from previous Competition sponsors, USC-STC is able to raise the bar each year to attract top teams with innovative ideas. This world-class event provides opportunities for the best and brightest minds in Canada to display technical and leadership skills in a real-life job interview.

Results have paid off as a number of USC-STC's previous competitors have been hired by a sponsoring company. When tested on the international stage, our Canadian teams not only take-home various awards, but consistently place at or near the top of the podium.

During the competition, sponsors will be recognized on social media posts and will be given links to the competition program and access to student resumes and contact information. To become involved as a sponsor, and invest in these talented students, the future of the Canadian UAS sector, check the Student Competition details section on for the

[Sponsorship Brochure](#) and contact competition@unmannedsystems.ca.



For more details, please contact the Student UAS Student Competition Admin Coordinator, Sue Chapman:

Email: sue.chapman@unmannedsystems.ca

Phone: 613-614-3724