Remote RoboColumbus-Plus Competition
(Guideline version – 20210604)

Purpose: This document provides guidance for competing in a DPRG RoboColumbus-Plus competition from a remote location. Competitors who do not live in the Dallas area can still compete by following this document. This document supplements the official RoboColumbus-Plus rules. All the rules in the official RoboColumbus-Plus rules document apply to remote location competitions. The intent is to make a remote location competition like the Dallas competition as much as possible, including using the same date and schedule.

Resources Required: Below is a list of the resources required to compete from a remote location.

- The competitor must first locate a location that is suitable to setup a RoboColumbus-Plus course. The course's surface should be primarily nature material such as grass. Parks or fields are examples of possible locations. Parking lots are usually not suitable, because they may only have paved surfaces.
- Permission to use the remote site is the responsibility of the contestant, not DPRG. DPRG assumes no responsibility for remote contestants' selection and use of any site. By choosing to participate remotely, contestants acknowledge and accept full responsibility for their selection and use of a remote contest venue. DPRG expects remote contestants to exercise good judgement and recommends (but does not require) that remote participants proactively obtain site explicit permission when appropriate.
- Each remote competition requires at least one additional person another than the competitor. The person can be a friend. This additional person will help with handling judging, setting up the course, video runs, and holding the remote switch.
- At least one traffic cone is required*. The official cone can be purchased from Home Depot https://www.homedepot.com/p/BOEN-18-in-Orange-PVC-Non-Reflective-Traffic-Safety-Cone-TC-18/303390681. Cones of similar size and color without reflective stripes may also be used if the official cone is unavailable or similar cones are already in hand. If the full course is being run, three cones are required.
- A phone capable of steaming video via Google Meet, or a video camera / phone capable of recording video. Having 2 phones may make tasks easier.
- A five-foot piece of either masking tape or rope to use as a starting line.

* A competitor can decide to run a limited course using only a target cone (i.e., no challenge or home cone). In this case only one cone is required and the maximum points that can be obtained is 3. Alternatively, a competitor can also decide to run a 2-cone limited course using a target cone, and a home cone. When 2 cones are used the maximum points that can be obtained is 6.

Course Modification: If the remote location does not have sufficient obstacles between the challenge cone and home cone, or the challenge cone and the target cone, the competitor can add obstacles to the course. Example added obstacles are a medium or large cardboard box, or

a log, or garden tie, or a bicycle. Added obstacles cannot be pushed out of the way by a robot during a run. Robots must navigate around added obstacles or climb over them.

Selecting a Remote Location: After a potential remote location has been located by a remote competitor, the GPS coordinates of the center of the location should sent by email to secretary@dprg.org for review. This review is only to make sure that the site meets the requirements of the contest in terms of such variables as terrain surface, availability of obstacles, overall size, etc. The GPS information should be sent as soon as possible and no later than 2 weeks before the competition. The site will be reviewed using Google Earth by DPRG for suitability. An email will be sent to the competitor with the site's review result. On the day of the competition, cone and starting line locations for the competition will be sent to the competitor.

Competition Schedule: The schedule for the competition is divided into following time periods.
- Announcement of GPS coordinates of cones.
- Course setup.
- Robots checked for weight, size, and safety switch compliance.
- Contestants allowed to walk course (unless participating in the 3 Waypoint Challenge) and if used, setup RTK-GPS base station. Robots are <u>not</u> allowed on course.
- Lunch and social sharing via Google meeting.
- Start of Competition.
- End of Competition.

Check https://www.dprg.org/robocolumbus-competition-2021/ for the specific time schedule of the event.

Remote Competition Communication: Remote competitors should virtually join the competition's Google Meet during the competition using https://meet.google.com/hey-jxuo-esf or join by phone at +1 405-586-5598 PIN: 682 931 334 #. This allows for remote locations and the Dallas location to share the excitement of the competition. We recommend that non-Dallas participants stream the Google Meet to a large display screen, if possible, to facilitate interaction.

Competition Videos: Remote competitors must submit the following videos before the end of the competition. The videos can be streamed using Google meeting or uploaded to YouTube.

- A video that shows a good view of the robot from several angles and the measurement of its weight, size, and safety switch compliance.
- A video of the robot's competition runs. If the run is not streamed on the Google Meet, the video should state the date and time at both the beginning and ending of the run. A separate video should be made of each of the 3 runs. The start time between runs should be less than 30 minutes of each other.

Streaming the runs using the Google Meet via phone on cellular or Wi-Fi while in progress is preferred. However, if that is not possible, they may be hosted on YouTube using either the unlisted or public option. If hosted on YouTube, links to the videos must be included in an email sent to secretary@dprg.org before the end of the competition.

Prizes for Remote Locations: All remote competitors that score at least one point on a competition run (see rules) will receive a custom RoboColumbus coffee mug. If a contestant achieves a perfect score, they will receive a "Perfect Score" RoboColumbus coffee mug. If a contestant achieves a perfect score while participating in the robot-planned category (see rules), they will receive a "Perfect Score with 3 Waypoint Challenge" RoboColumbus coffee mug. A participant can receive only one mug. It will reflect their highest achievement. Additionally, up to 3 prizes will be awarded based on the total count of all remote competitors using the following schedule:

- if total count of all remote competitors is 4 or greater, 3 prizes will be rewarded.
- If total count of all remote competitors is 3, 2 prizes will be rewarded.
- If total count of all remote competitors is 2, 1 prize will be rewarded.

Flexibility: The goal of the RoboColumbus-Plus competition is to have fun and share the rover robot competition experience with friends in many locations. The guidelines above outline what DPRG expects will be needed for running a remote competition, however problems will most likely arise. The competition will be run with flexibility so as many people as possible can participate and enjoy the experience. If a remote location is experiencing issues, communicate them using the Google Meet or by phone for help.