Tournament Manual

2021 WWFIRST Elegoo Virtual Competition

Organization

The WWFIRST 2021 Smart Robot Car competition will run as the **2021 WWFIRST Elegoo Virtual Competition** and will be played over multiple virtual events held at different predetermined dates and times. Each participant will be randomly placed in a tournament with a maximum of 32 participants per tournament. The number of tournaments will depend on the number of participants. Each participant will also be placed in a division. These divisions will try to combine participants with similar experience and knowledge. The number of divisions will also depend on the number of participants, with a minimum of 2 divisions.

Each participant will play 2 voluntary **practice matches** and 3 mandatory **qualification matches**, each played in a **round robin bracket**. Each participant will be placed with 3 other participants, which make up the round robin bracket. More details are available in Appendix 01 - Round Robin Bracket.

The voluntary practice matches will be a good indication of what each participant can accomplish and where improvements can be made. These practice matches are optional and matches will only be scored individually. No ranking points will be awarded.

The mandatory qualification matches will be used to **award ranking points** according to the round-robin bracket. Your matches will be played against other participants within your qualification round robin bracket. We will use a similar format as soccer or football to determine the final rankings across the different brackets (**GF** - Goals For**, GD** - Goal Differential**, RP** - Ranking Points).

Ranking points will be awarded according to the following Ranking Points Chart

Match outcome	Participant Ranking Points
Win	3
Tie	2
Loss (or no show)	0

Each tournament will advance a preset number of participants, determined by a maximum total of 32 advancing participants to the Championship. The Championship will be played in a single elimination bracket per division.

Mandatory requirements for participation

In order to qualify for the 2021 WWFIRST Elegoo Virtual Competition, you are required to:

- Use the preprogrammed ESP-01 wifi module, fully set up on your local wifi network as per instructions. See *https://wwfirst.ca/resources/ for more details*.
- Use the Arduino Driver Station Class sketch (DriverStation.h) and implement it inside your sketches as per instructions. See *https://wwfirst.ca/resources/ for more details*.
- Use the provided Driver Station WebApp and use it to control the match and robot as per instructions. See *https://wwfirst.ca/resources/ for more details*.
- Abide by the 2021 Game Manual (and any updates).
- Abide by the 2021 Tournament Manual (and any updates), including but not limited to the Robot Match Video Recording requirements.

Robot Match Video Recording

In order to participate in the competition, a video of each match will have to be uploaded by each participant. These recordings will have to adhere to a set of required specifications.

These required specifications might be modified or updated as needed, and each update will be made available together with the Game Manual updates on Mondays. No modifications will be made two weeks before the start of the first qualification tournament.

Here's a list of current specifications:

1. You will **upload a single unedited video** of each match - before, during and after the game, with no pauses - so make sure you keep recording throughout the entire time.
2. **Any video equipment** will do. A cell phone video will work as well as a digital camera with a tripod.
3. Be sure to check your video recording settings before starting.
4. Each video will be **uploaded to a specific location through a Google Form**.
5. **If possible please compress your video to a YouTube HD profile** through the use of VLC (a free cross platform video software). This is **NOT MANDATORY**! See Appendix 02 - VLC Convert Instructions for a how-to.
6. Each video will **have to show the driver station connection** before the start of each match AND **each driver station will have the sound turned on to high** in order that the video will be able to record the start and end beep of each match.
7. Participants will receive a PCODE from WWFIRST to help uniquely identify their videos.
8. Each **video will require a specific name and extension** in the following format:

    WWFIRST-PCODE-FIRSTNAME+[LASTNAME INITIAL]-[Q/P]#.MP4

    - **[Q/P]** will describe if the match is a **Q**ualification or **P**ractice Match.
    - **#** will indicate match number, **1** or **2** for Practice and **1**, **2** or **3** for Qualification.
    - **PCODE** will indicate your Division, Bracket and Participant number, provided at sign up
       - If you do not have a PCODE yet, use your FRC team # (or 9999 if not part of FRC)
    - **FIRSTNAME** your first name and **[LASTNAME INITIAL]** the initial of your last name.
    Examples:
    - WWFIRST-D1B1-1-EMILYJ-P1.MP4
    - WWFIRST-D2B2-8-JOHNC-Q1.MP4
9. At the **end of each match, the participant will show the driver station** again and **record the final locations of the game pieces and an overview of the full mat**. Make sure to NOT touch any objects, including game pieces and robots!
10. All **video recordings will happen either from the A, C line on the field, or from the centre logo side of the field**. Make sure there are no obstructions and the entire field is in view. Make sure to record each match from the same side of the field. (See Appendix 03 - Video Recording Diagram for a diagram).

11. **Moving the video camera during the full match is NOT allowed**. If the camera is handheld (eg. smartphone without stand), minimal motion is acceptable.

Practice matches

Each participant will be allowed to submit two (2) practice matches to the referees at two different time intervals. These time intervals will be communicated at least 10 days ahead of time.

The same video recording rules apply in order for the referees to score your practice matches. Make sure to rename your practice match videos according to the above naming convention.

The practice matches will not accumulate ranking points!

Practice matches are voluntary and are not a requirement to qualify for the qualification matches or competition.

It is your responsibility to ensure that your video matches are submitted by the provided deadline! There are no exceptions!

Referees will score each practice match and return the score to you within a set time of 1 week after the submission deadline. If required, feedback will be given to you in writing at the same time over email.

Scores will not be made available online!

You can ask for further feedback from the referees over the **Discord Voice Channel : practice games**, which will be made available during the tournament events.

All feedback and comments made by referees with respect to practice matches are for your information only and will not be used for your qualification matches.

In between the 2 practice matches two **Discord channels : referees and head-referee** will be made available for participants to ask general clarification of rules. Only use the head-referee channel for further information!

Qualification matches

Each participant will be provided the opportunity to submit three (3) official qualification matches to the referees at three different time intervals. These time intervals will be communicated at least 10 days ahead of time.

All video recording rules apply in order for the referees to score your qualification matches.

Make sure to rename each qualification match video according to the above naming convention provided in the Robot Match Video Recording section.

The qualification matches will be used to accumulate ranking points, according to the above mentioned Ranking Points Chart!

Each qualification match is mandatory and not submitting a qualification match video will result in a No-Show with zero (0) ranking points for that match. A No-Show does NOT disqualify you from participating in any other matches.

It is your responsibility to ensure that your video matches are submitted by the provided deadline! There are no exceptions! If you have technical difficulties, please contact your WWFIRST representative immediately!

Referees will score each qualification match and submit the score to you within a set time of 1 week after the submission deadline. If required, feedback will be given to you in writing at the same time over email.

You can ask for further clarification online during specific times over a dedicated **Discord Voice Channel: qualification-head-ref**, however the decision of the head referee is always FINAL. In order to ask for clarification, you are required to ask for a specific time with a maximum of 10 minutes time window.

At the end of each tournament's qualification matches all ranking points and match scores will be made available online.

Championship

~~The total number of participants advancing will be no more than 32 divided over the number of tournaments and divisions. The number of advancing participants will be determined at the beginning of the 2021 WWFIRST Elegoo Virtual Competition.~~

~~The championship will be a single elimination tournament and will run as one (1) tournament.~~

~~Currently our intent is to run the~~ **~~Championship as a Virtual Live Event~~**~~. However this will depend on the technical feasibility of the tournament Live Streaming and the referees. The tournament organizers reserve the right to change the event to a video submission event played over the course of maximum two (2) weeks.~~ **~~More details will be made available at a later date~~**~~.~~

~~A single elimination tournament will set participants against each other in a predetermined bracket. Each match will decide who moves on to the next round. More details can be found in~~ ~~.~~

Due to the low number of participants, participants will be able to pick the best out of three games or submit another (4th) video for the championship.

At the end of the tournament, one participant per division will be named Champion and the runner up will be named Champion 2nd Place. Other awards will be presented as determined by the tournament organizers, and which might include:

- Highest Seed Score Award
- Creative Thinking Award (unique overall robot)
- Innovation in Control Award (Programming to control robot/attachment)
- Industrial Design Award (unique mastercrafted attachment)
- Autonomous Award (highest points, unique idea)
- Digital Video Award (* for those who want to submit a promotional video)
- Rookie Award (Grade 9 or 10 and rookie)

Details about the awards will be made available in a separate document.

2021 WWFIRST Elegoo Virtual Showcase

~~The 2021 WWFIRST Elegoo Virtual Showcase is an opportunity to celebrate the learning and accomplishments of the students who participated in the WWFIRST 2021 Elegoo Competition, hosted by Waterloo Wellington FIRST Robotics Organization.~~

~~This culmination of all the different qualifier tournaments, during which participants submitted recordings of their Elegoo Smart Car robot matches for scoring by referees, will mirror as much as possible an in-person event experience, including opening and closing ceremonies, match footage with live commentary by game announcers and award winners.~~

~~This event will be a live streamed event over YouTube and possibly Zoom.~~
~~Depending if the Championship is held Live, this showcase might be modified and held on the same day.~~

~~We are hoping to include some small interviews, participant promotional videos, clips of the different workshops, and more.~~

~~The ultimate goal is to have a fun event which provides a good snapshot of the past season and a look forward to the upcoming 2021 Fall Season.~~

The 2021 WWFIRST Elegoo Virtual Showcase has been cancelled.

Appendixes

Appendix 01 - Round Robin Bracket

Division 1

Bracket 1

#	Pcode	Name	Team	1.	2.	3.	4.
1	D1B1-1			■			
5	D1B1-5				■		
9	D1B1-9					■	
13	D1B1-13						■

Standings	Name	RP	W	T	L	Game Pts
1		0	0	0	0	0
2		0	0	0	0	0
3		0	0	0	0	0
4		0	0	0	0	0

Bracket 2

#	Pcode	Name	Team	1.	2.	3.	4.
2	D1B2-2			■			
6	D1B2-6				■		
10	D1B2-10					■	
14	D1B2-14						■

Standings	Name	Points	W	T	L	Game Pts
1		0	0	0	0	0
2		0	0	0	0	0
3		0	0	0	0	0
4		0	0	0	0	0

Bracket 3

| #	Pcode	Name	Team	1.	2.	3.	4.

The total ranking of all brackets will be determined by a formula which includes Ranking Points (RP), Goal Difference (GD) and Goal For (GF).

Appendix 02 - VLC Convert Instructions

VLC (Windows, Mac, Linux)
As one of the most popular media-viewing and -editing apps around, it's no surprise that VLC is a great choice for making video files smaller.

First, download VLC from https://www.videolan.org/ (Windows, Mac, and Linux versions are available). After it's done installing, run it and click Media > Convert/Save.
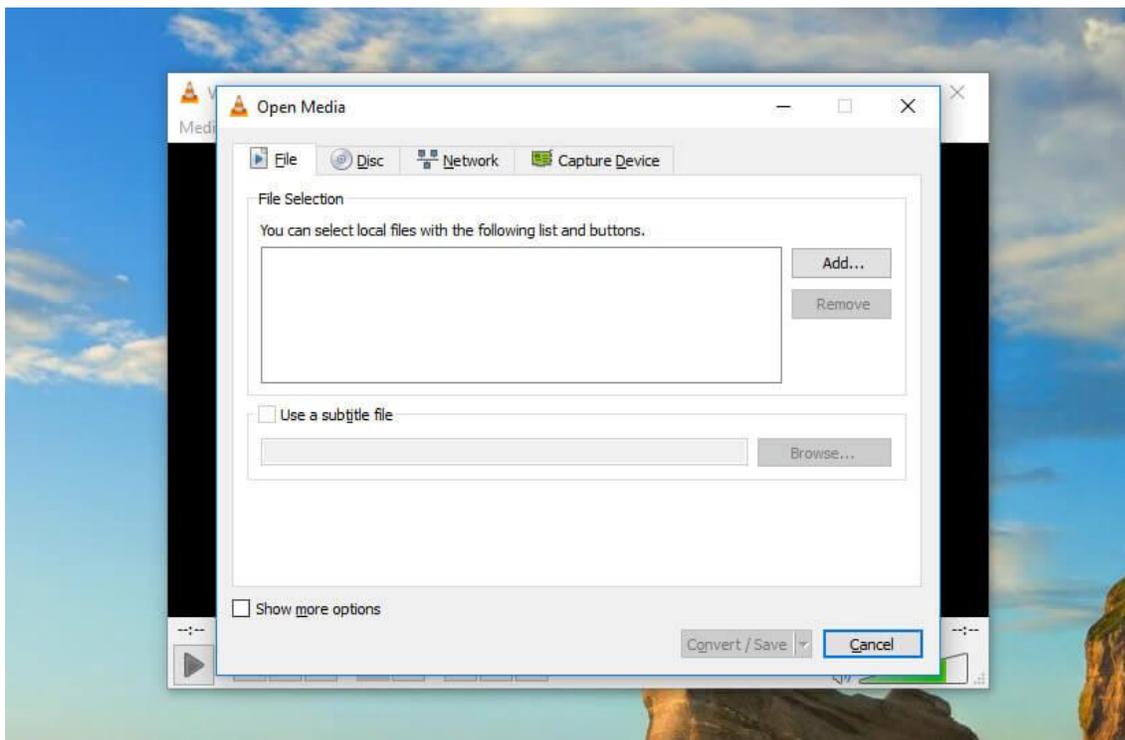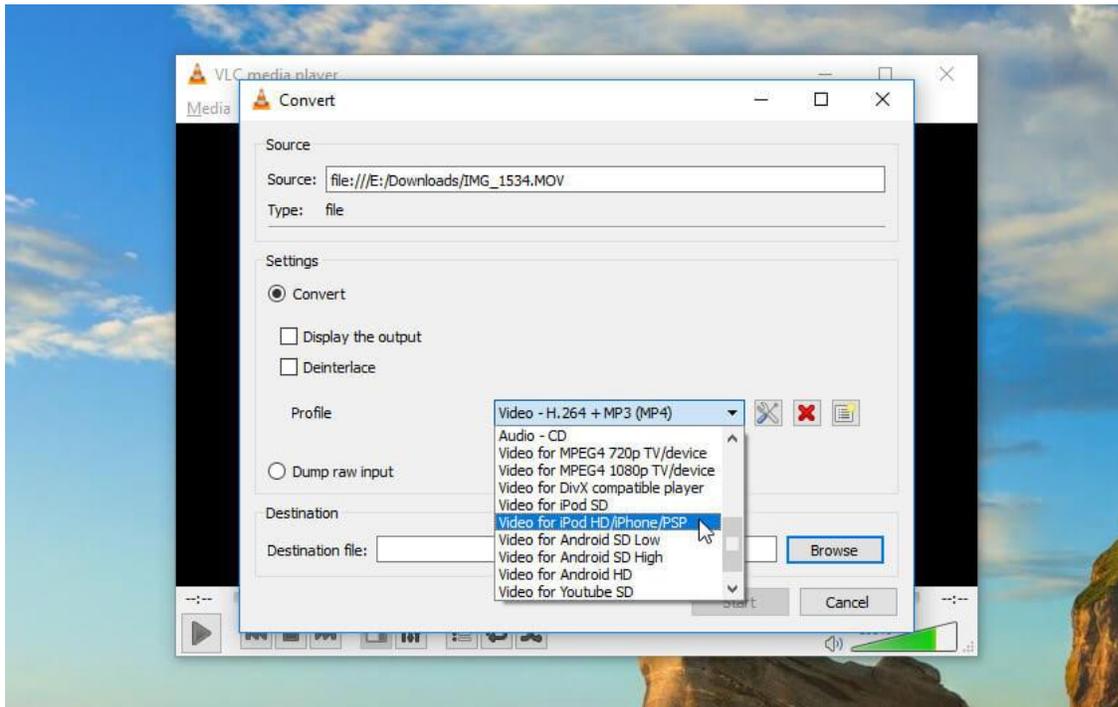

Reducing video file size with VLC convert
Then click Add and select your video file (you can also select multiple files to convert them as a batch).
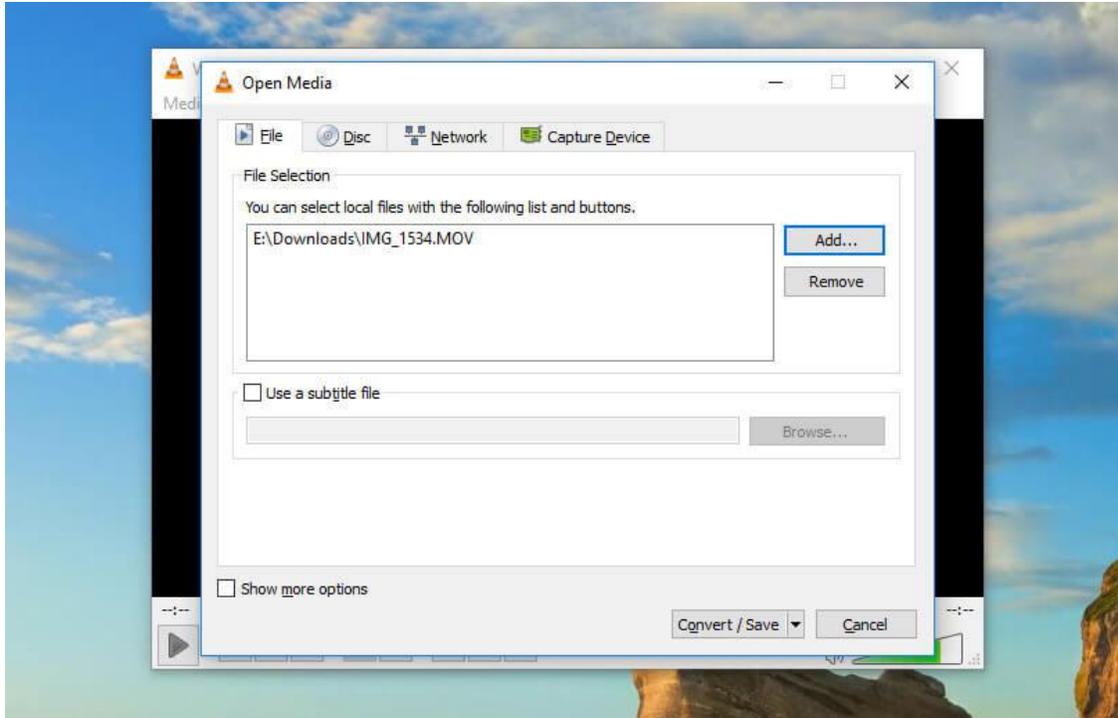
Add the video file to VLC

Click Convert/Save to bring up conversion options. In the Profile dropdown, you'll need to select the type of conversion that you want.

Select the type of conversion you want
Because we want to retain high quality. Just select Video for YouTube HD.

You'll need to enter a destination location and filename—click Browse to specify them.
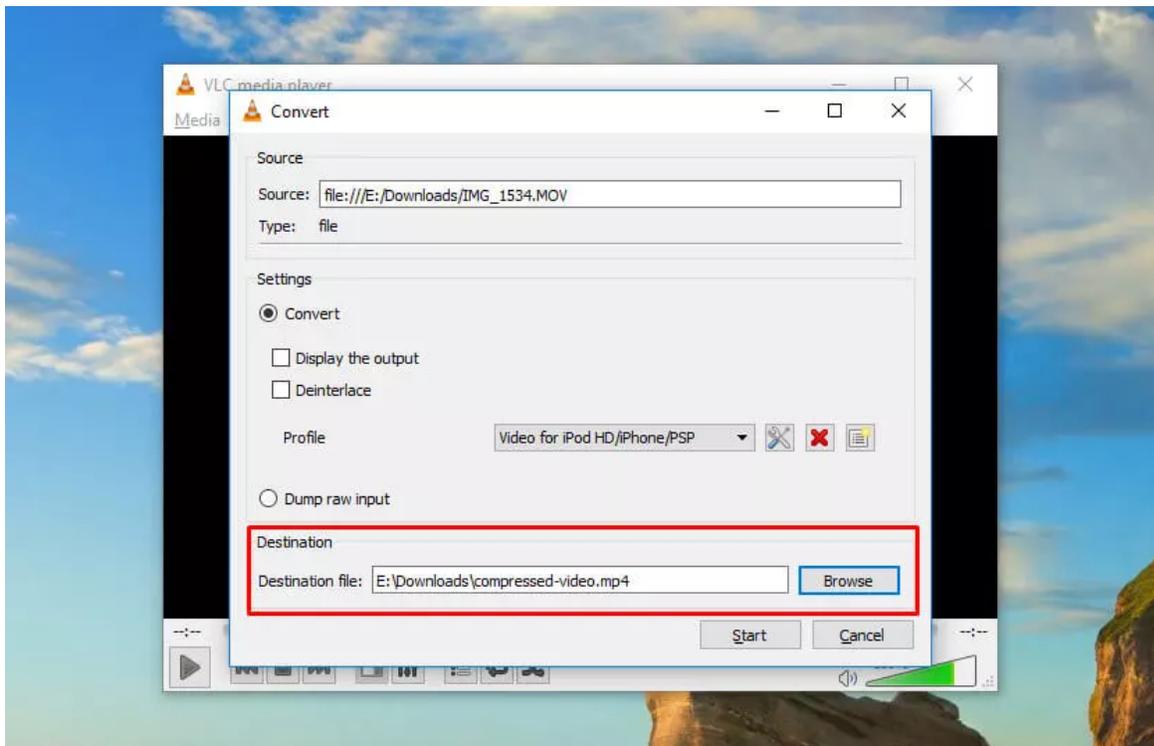
Once you've done that, just hit Start.

If you're compressing a large video, it might take some time. But when it's done, you'll have a new video file that should take up a lot less space.

Appendix 03 - Video Recording Diagram
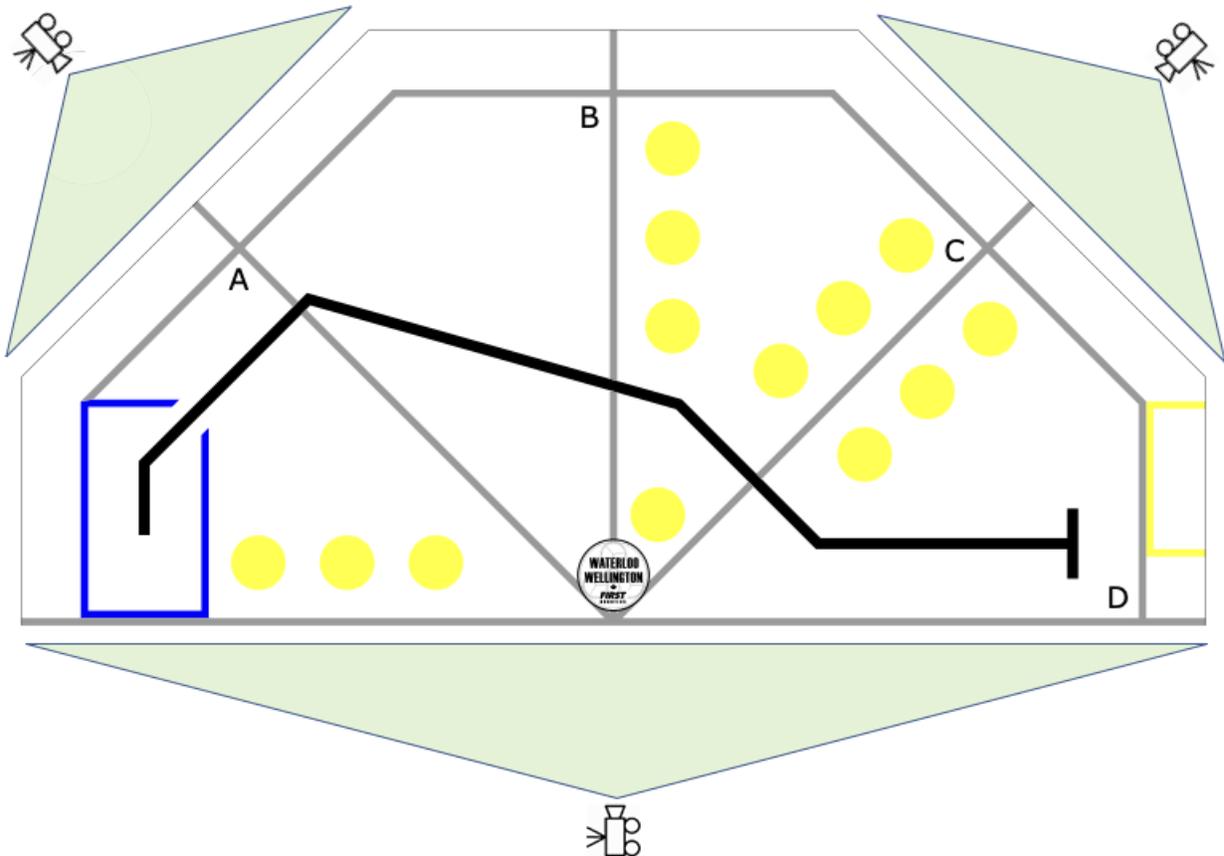
Allowed Camera Angles:

- Center diagonal line between section A and B
- Center diagonal line between section C and D
- Center middle field along the WWFRO logo

ALWAYS make sure you cover more than the entire mat !

Appendix 04 - Single Elimination Bracket

```
Seed 1  ─┐
         ├─ Seed 1  ─┐
Seed 16 ─┘          ├─ Seed 1  ─┐
                     │          ├─ Seed 1  ─┐
Seed 8  ─┐          │          │          │
         ├─ Seed 8  ─┘          │          │
Seed 9  ─┘                      │          │
                                ├─ Seed 1  ─┐
Seed 5  ─┐                      │          │
         ├─ Seed 5  ─┐          │          │
Seed 12 ─┘          ├─ Seed 4  ─┘          │
                     │                      │
Seed 4  ─┐          │                      │
         ├─ Seed 4  ─┘                      │
Seed 13 ─┘                                  │
                                            ├─ Seed 1
Seed 6  ─┐                                  │
         ├─ Seed 6  ─┐                      │
Seed 11 ─┘          ├─ Seed 3  ─┐          │
                     │          │          │
Seed 3  ─┐          │          │          │
         ├─ Seed 3  ─┘          │          │
Seed 14 ─┘                      ├─ Seed 2  ─┘
                                │
Seed 7  ─┐                      │
         ├─ Seed 7  ─┐          │
Seed 10 ─┘          ├─ Seed 2  ─┘
                     │
Seed 2  ─┐          │
         ├─ Seed 2  ─┘
Seed 15 ─┘
```