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VEX ROBOTICS COMPETITION

TIPPING POINT

2021 - 2022
Appendix E - Live Remote Competitions

Appendix E
Live Remote Competitions

Live Remote Tournament Overview

Traditional VEX Robotics Competition events are held "in-person" in a classroom, school gymnasium, or community center. In the 2021-2022 season, *Event Partners* can also choose to hold an event entirely remotely, utilizing the RobotEvents.com Live Remote Tournament (LRT) interface. More information about this interface can be found here: https://www.roboticseducation.org/about-live-remote-tournaments

VRC Tipping Point for LRT is played by two *Teams* - one "red" and one "blue". Each *Team* competes on a separate field (i.e. there are two *Robots*, two *Teams*, and two fields in each *Match*).

The LRT playing field is set up exactly the same as a normal VRC Tipping Point *Match*. *Matches* consist of a fifteen second (0:15) *Autonomous Period*, followed by a one minute and forty-five second (1:45) *Driver Controlled Period*.

Teams playing in a Live Remote Tournament event are ranked primarily by their total *Win Points* (WPs) gained during *Qualification Matches*. *Win Points* are awarded by winning *Matches*, completing the *Autonomous Win Point* task, and by Owning any of the three *Zones*. There are a total of six (6) *Win Points* available to a *Team* in a VRC Tipping Point LRT *Match*.

Unless otherwise noted below, all rules and definitions in the standard Game Manual apply to Live Remote Matches.

Live Remote Tournament Definitions

Autonomous Win Point (LRT) - The one (1) *Win Point* (WP) given to a *Team* that has *Cleared* their *AWP Line*, and *Scored* at least one *Ring* on any *Mobile Goal*, at the end of the *Autonomous Period*. Both *Teams* can earn this Win Point if both *Teams* accomplish this task.

Owned - A *Zone* status. A given *Zone* is considered *Owned* by a *Team* if their *Zone Score* for that *Zone* is greater than the opposing *Team's Zone Score* for that *Zone*. Each of the three *Zones* may only be *Owned* by one *Team*. If the two *Team's Zone Scores* for a given *Zone* are tied, then the *Zone* is not considered *Owned* by either *Team*.

Win Points (WP) - The first basis of ranking *Teams*. *Teams* will receive between zero (0) and six (6) *Win Points* in each *Qualification Match*.

- One (1) WP is awarded at the end of the *Autonomous Period* to any *Team* earning the *Autonomous Win Point*.
- Two (2) WPs are awarded for winning a *Qualification Match*.
- One (1) WP is awarded for tying a *Qualification Match*.
- Zero (0) WPs are awarded for losing a *Qualification Match*.
- One (1) WP is awarded for each *Zone* that is *Owned* by a Team in a *Qualification Match*. There are a maximum of three (3) WPs available for *Owned Zones*.

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Zone - A *Neutral Zone* or *Alliance Home Zone*.

Zone Score - A *Team's* total points scored from *Rings*, *Mobile Goals*, and *Platforms* in a given *Zone* at the end of the *Match*. See Figure 1 for an example.

Live Remote Tournament Scoring

Each *Ring* on / in a *Mobile Goal*	*Mobile Goal* High Branch	10 Points
	Any other *Mobile Goal* Branch	3 Points
	Mobile Goal Base	0 Points
Mobile Goals	Ends *Match* in either *Alliance Home Zone*	30 Points
	Ends *Match* in the *Neutral Zone*	10 Points
	Ends *Match* on a *Balanced Platform*	40 Points
Robot	*Elevated* on a *Balanced Platform*	30 Points
Team	Wins *Autonomous Bonus*	6 Points

Scoring Notes

1. All *Mobile Goals* and *Platforms* may be considered "neutral". For example, *Alliance Mobile Goals* may be *Scored* in any *Zone*, and *Robots* may *Elevate* on either color *Platform*.
2. For the purposes of scoring, *Rings* on *Mobile Goal Branches* will be rounded down to one (1) or four (4) *Rings*. For example, a *Mobile Goal Branch* with three *Rings* on it will only receive points for one.
3. *Rings* which are *Scored* in *Mobile Goal Bases* are not worth any points.
4. Any restrictions that *Scoring Objects* must not be contacting a *Robot* in order to be *Scored* do not apply. For example, a *Ring* which is contacting a *Robot*, but would otherwise meet all criteria for being *Scored*, would be considered *Scored*.

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For the sake of simplicity, the following assumptions have been made for this example *Match*:

- Neither *Team* received the *Autonomous Win Point*, and the *Autonomous Bonus* was a tie.
- Neither *Team* has *Scored* any *Rings*.
- All *Platforms* are *Balanced* at the end of the *Match*

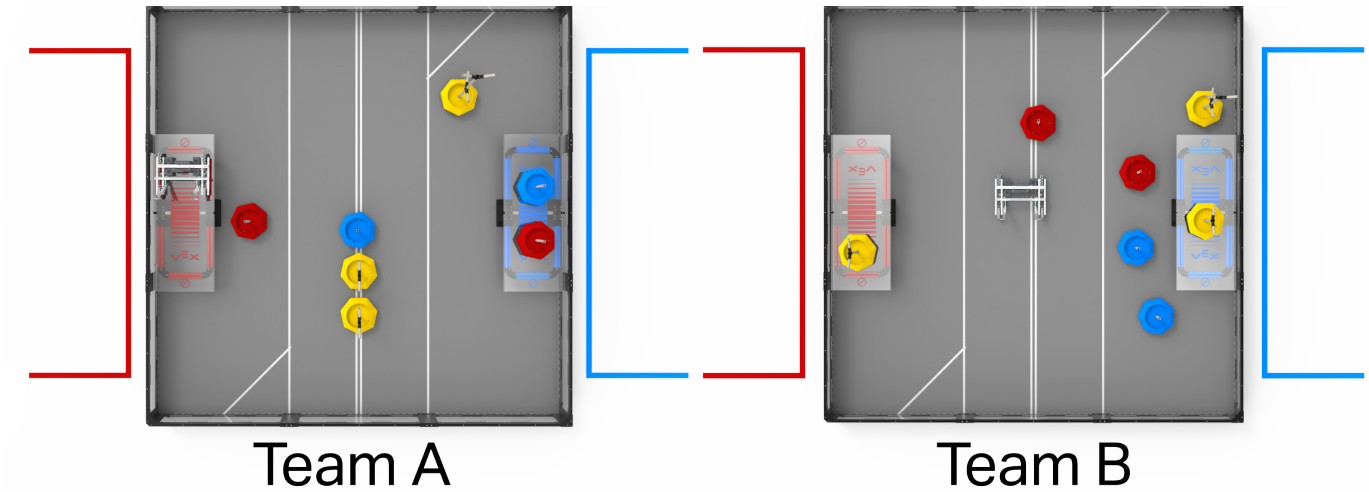

Figure 1: *An example Live Remote Match scoring scenario*

The scores for this *Match* would be as follows:

Zone Score	*Team* A	*Team* B	*Owned*?
Red Home Zone	60	40	*Team* A
Neutral Zone	30	10	*Team* A
Blue Home Zone	110	160	*Team* B
Total Points	**200**	**210**	

In this example *Match*:

- Team A would receive two (2) *Zone Win Points*, for Owning the Red Home Zone and the *Neutral Zone*.
- Team B would receive one (1) *Zone Win Point*, for Owning the Blue Home Zone.
- Team B would receive two (2) *Match Win Points*, for winning the *Match*.

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Live Remote Tournament Game Rules

<LRT1> This rule has been superseded by rules <LRT8> through <LRT12>.

<LRT2> This rule is an extension of rule <G7>. During a Live Remote Tournament *Match*, *Drive Team Members* must stand in the *Alliance Station* associated with their *Team* color.

a. During a *Match*, the three (3) *Drive Team Members* in the *Alliance Station* are the only *Team* members permitted to influence the operation of their *Robot*, either directly or indirectly. The intent of this rule is to prohibit "sideline coaching" from other *Team* Members who are in close proximity to the *Drive Team Members*.
   i. Although an *Adult Team* contact is required to be present, <G2> still applies during the *Match*. *Adult Team* Members are explicitly prohibited from providing "sideline coaching" once the *Match* begins.
b. *Drive Team Members* are permitted to utilize devices with communication features enabled while in the *Alliance Station*. The intent of this rule is to allow *Drive Team Members* to monitor the Live Remote video feeds of their opponents. Using a device with communication features enabled to receive "sideline coaching" from another *Team* Member would still be a violation of this rule.

If *Drive Team Members* are unable to stand in the *Alliance Station* due to external circumstances in their remote environment, such as a wall, then they should inform the *Head Referee* of this constraint prior to the *Match* and / or during the field inspection. Exceptions to that portion of this rule may be granted at the *Head Referee's* discretion. *Head Referees* are advised to give *Teams* the "benefit of the doubt" in this situation.

<LRT3> This rule is a modification of rule <G8>. During a Live Remote Tournament Match, a *Drive Team Member's* V5 Controller must be plugged into the computer being used for the remote competition interface via a USB cable for the duration of the *Match*.

<LRT4> This rule is a modification of rule <SG9>. *Scoring Objects* that leave the field during *Match* play, intentionally or unintentionally, will not be returned to the field. Intentionally, strategically, or repeatedly removing *Scoring Objects* from the field may still be considered a violation of <SG9> at the *Head Referee's* discretion.

<LRT5> In a Live Remote Tournament *Match*, *Teams* must set up their own field in accordance with the layouts, tolerances, and specifications found in the Game Manual and Appendix A.
a. Prior to a *Match*, a *Head Referee* will verify each *Team's* field layout and request any adjustments as needed. A *Team* will not be permitted to play in a *Match* until the *Head Referee* has approved their field layout; refusal to comply with any requested adjustments may be considered a violation of <G1> at the *Head Referee's* discretion.
b. *Teams* are permitted to construct their own field perimeters, in accordance with the Non-Standard Field Perimeter Guidelines found in Appendix A.
   i. If using an unofficial field perimeter, *Teams* may be asked to verify their compliance with these guidelines as a part of the inspection process.
   ii. Official VRC foam tiles (VEX Robotics SKU 278-1502 or 276-7175) must be used.

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iii. The official VRC Tipping Point Full Field & Game Elements Kit (VEX Robotics SKU 276-7048) must be used.

c. *Teams* must still utilize their three (3) *Preload* Rings as specified in rule <SG1>.
   i. The nine (9) *Rings* that would be used as *Preloads* by the other *Teams* in the *Match* are not placed on the field.

d. *Teams* may utilize eighteen (18) *Match Load Rings*, within the guidelines set forth by <SG8>.
   i. All *Match Load Rings* begin the *Match* in the *Alliance Station* associated with the *Team's* color for that *Match*. *Match Load Rings* may not be introduced from the opponent's *Alliance Station*.

<LRT6> In a VEX U Live Remote *Match*, each *Team* plays with two *Robots* per <VUG1> and <VUR1>. The two *Robots* play on one field at the same time. Therefore, there are four *Robots*, two *Teams*, and two fields in each *Match*.

a. Both *Robots* from a given *Team*, playing on the same field, must both be connected to the same remote interface computer via separate USB cables for the duration of the *Match*. Connection via a multi-port USB hub is permissible, provided that it does not interfere with the remote interface.

<LRT7> The following rules do not apply to Live Remote Tournament *Matches*:

- <SG3> - *Teams* may utilize either *Platform* during the endgame.
- <SG4> - *Teams* may enter the opponent's *Alliance Home Zone* during the *Autonomous Period*.
- <SG5>- There are no other *Robots* on the field with whom to interfere in the *Neutral Zone*.
- <SG6> - Once the *Match* begins, both *Alliance Mobile Goals* are considered color-neutral.
- <SG7> - There is no limit to the number of *Mobile Goals* that *Robots* may Hoard.

<LRT8> An *Adult Team* contact must be present in all *Matches*.

<LRT9> *Teams* will complete a full *Robot* and Field inspection.

<LRT10> All *Team* camera footage must be streamed live, from one camera feed, with no "cuts". A *Team's* camera must be placed on the "audience side" of the field, i.e. the Red *Alliance Station* on the left side of the screen.

<LRT11> *Matches* must include some live interaction between the *Team* and the *Head Referee*.

<LRT12> *Match* replays are at the discretion of the *Head Referee*.

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VRC World Live Remote Tournament Ranking

Teams will be ranked globally from qualifying Live Remote Tournament results at robotevents.com according to the following process:

- A *Team's* ranking for a Live Remote Tournament will be the sum of:
  - Total LRT *Qualification Match WPs* normalized to 6: (Total *WPs* / # Qual Matches) x 6
  - (5) additional points for playing in the Semifinals bracket
  - (5) additional points for playing in the Finals bracket
  - (5) additional points for winning the Finals bracket
- A *Team's* World LRT Ranking will be an average of their (2) top highest LRT event rankings. If a *Team* has only participated in (1) LRT event, their LRT Ranking will still be averaged over (2) events.
- If *Teams* are tied in the World LRT Rankings, then the *Team* that posted their highest LRT event score first would be ranked higher. If there is still a tie, the ranking will be randomly assigned.

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