Appendix B – The Robot Skills Challenge

Overview

This section describes the new combined Robot Skills Challenge of *VEX Robotics Competition In the Zone.*

Please note that the Robot Skills Challenge may not be offered at all tournaments. Please check with your local event organizer, or www.robotevents.com *for more information.*

Robot Skills Challenge Description

In this challenge teams will compete in sixty (60) second long matches in an effort to score as many points as possible. These matches consist of *Driver Skills Matches,* which will be entirely driver controlled, and *Programing Skills Matches*, which will be autonomous with limited human interaction. Teams will be ranked based on their combined score in the two types of matches. The playing field will be set up similarly to that of a normal *VEX Robotics Competition In the Zone* tournament match, however teams will only have one alliance's set of *Match Loads* available as *Skills Loads*.
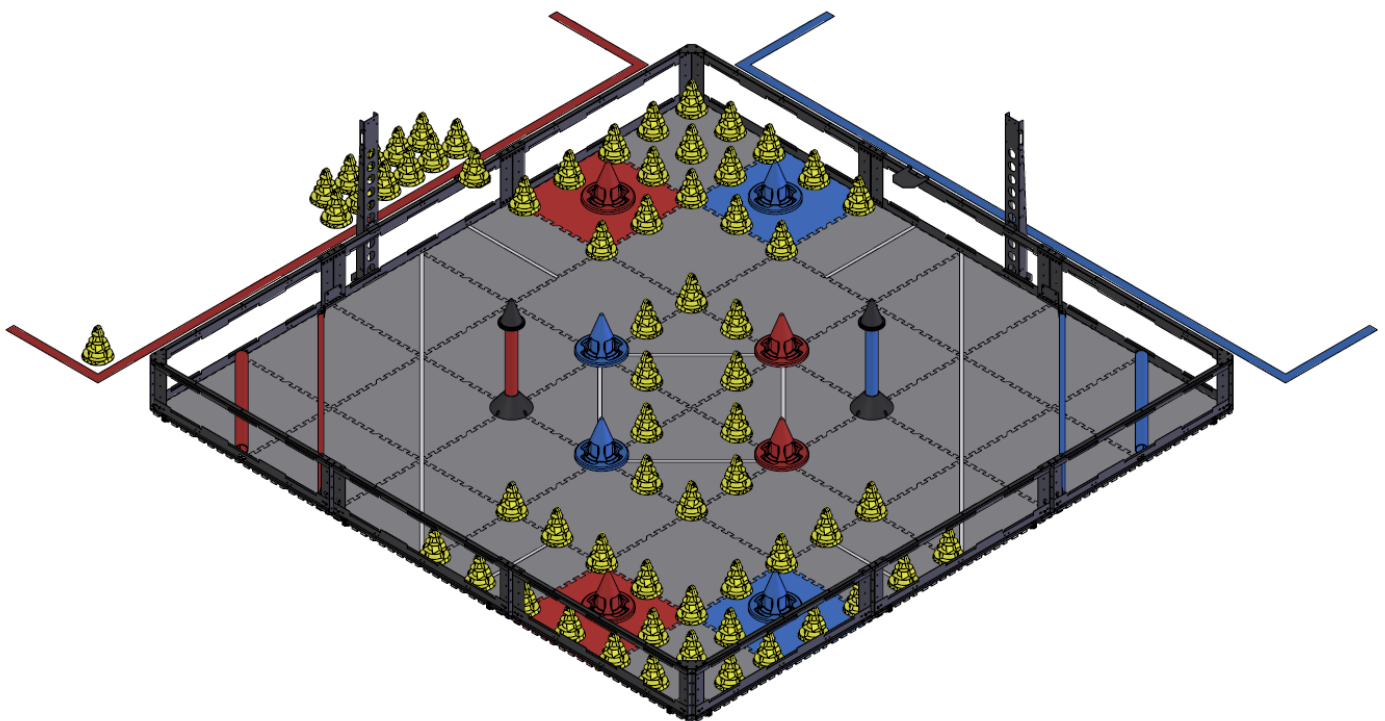
Note: Driver Skills Matches and the Programming Skills Matches use the same field setup!

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Robot Skills Challenge Definitions

Please note that all definitions from "The Game" section of the manual apply to the Robot Skills Challenge, unless otherwise specified.

Driving Skills Match – A *Driving Skills Match* consists of a sixty (60) second *Driver Controlled Period*. There is no *Autonomous Period*. Teams can elect to end their run early, however this will count as an official run.

Programming Skills Match – A *Programming Skills Match* consists of a sixty (60) second *Autonomous Period*. There is no *Driver Controlled Period*. Teams can elect to end their run early, however this will count as an official run.

Robot Skills Loads – The twelve (12) Cones that *Drive Team Members* may place onto their *Loader* at any point during the *Skills Match*, one at a time.

Robot Skills Preload – The one (1) *Cone* that must be placed on the field such it satisfies the following conditions, as per <RSC2>, at the start of the *Skills Match*:

- The *Skills Preload* is touching the *Robot.*
- The *Skills Preload* is fully within the field perimeter.

Robot Skills Match – A *Driver Skills Match* or *Programming Skills Match.*

Robot Skills Challenge Rules

Please note that all rules from "The Game" section of the manual apply to the Robot Skills Challenge, unless otherwise specified.

<RSC1> At the beginning of each *Robot Skills Match*, the *Robot* must be placed such that it is touching a *Starting Bar* and not touching any *Scoring Object* other than those permitted by <RSC2>.

    a. Teams may elect to start their *Robot* at either the red or blue *Starting Bar*
    b. *Drive Team Members* are restricted to the *Alliance Station* of the same color as the *Starting Bar* the *Robot* starts from.

<RSC2> Prior to the start of each *Robot Skills Match*, the *Robot* must use its one (1) *Cone* available as a *Preload*. A *Cone* is considered to be legally preloaded if it is touching the *Robot,* and is fully within the field perimeter.

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<RSC3> In a *Robot Skills Match,* all *Goals*, *Zones*, *Parking Tiles,* and *Starting Bars* are considered to be the same color for purposes of any rules or definitions.

    a. *Robots* may *Stack Cones* on any color of *Goal* for points.
    b. *Robots* may *Score Goals* in any color of *Zone* for points.
    c. *Robots* may *Park* on any color of *Parking Tile* for points.

Robot Skills Challenge Scoring

Most scoring is the same as in a regular *VEX Robotics Competition In the Zone* match.

- A *Cone Stacked* on a *Goal* is worth two (2) points.
- A *Mobile Goal Scored* in *a 5 Point Zone* is worth five (5) points.
- A *Mobile Goal Scored* in *10 Point Zone* is worth ten (10) points.
- A *Mobile Goal Scored* in *20 Point Zone* is worth twenty (20) points.
- A *Robot Parked* at the end of the *Match* is worth two (2) points.

Robot Skills Challenge Format

- The Robot Skills Challenge is an optional event. Teams who do not compete will not be penalized in the main tournament.
- Teams will play *Skills Matches* on a "first come, first serve" basis, or by a method determined by the event.
- Teams will be guaranteed a minimum equal number of both types of *Skills Matches*, to be determined by the event organizers.
- Teams may also be limited to a maximum equal number of both types *Skills Matches*, to be determined by the event organizers.

Robot Skills Challenge Rankings

- For each *Skills Match* teams are awarded a score based on the above scoring rules.
- Teams will be ranked based on the sum of their highest *Programming Skills Match* score and *Driver Skills Match* score, with the team with the highest sum being declared the *Robot Skills Challenge* Winner.
- In the case where two teams are tied for the highest score, the tie will be broken by looking at both teams' next highest *Programming Skills Match* score. If the teams remain tied, the tie will be broken by looking at both teams' next highest *Driver Skills Match* score. This process will repeat until the tie is broken .
- If the tie cannot be broken (i.e. both teams have the exact same scores for each *Programming Skills Match* and *Driver Skills Match*), the next tie-breakers will be based on the following criteria in each team's highest scoring *Programming Skills Match*.
  - Number of points for *Mobile Goals* in *20 Point Zones.*
  - Number of points for *Mobile Goals* in *10 Point Zones.*

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- o Number of points for *Mobile Goals* in *5 Point Zones.*
- o Number of points for *Stacked Cones.*
- If the tie still cannot be broken, the same process in the step above will be applied to the teams' highest *Driver Skills Match.*
- If the tie still isn't broken, events may choose to allow teams to have one more deciding match or both teams will be declared the winner.