



QUESTIONS AND RESPONSES / QUESTIONS ET RÉPONSES

# ROBOTICS ROBOTIQUE

SECONDARY /  
NIVEAU SECONDAIRE

**Question One:**

**From:** Peter Bondi

**Sent:** Saturday, September 10, 2016 1:06 PM

**To:** Bob Tone

**Subject:** Scope Clarification- Robotics Team of Four

Hi sir, I'm Peter from Michael Power, and the student leader for this year's Skills Canada Robotics club, working with teacher moderators Mr. Comisso and Mr. Serpe .

We were reviewing the Contest Description and wanted clarification for an apparent contradiction in instructions.

On page 13, it states that "Teams can utilize a Maximum of 2 Tele-operated Robots " .

I understood this to be a lack of co-ordination and nothing more, and assume that we are allowed to use two tele-operated robots, and then one autonomous robot.

Is this assumption correct?

Thank you for your input in the matter,

Peter Bondi

**Response One:**

Teams must adhere to the 4 cubic feet maximum size for their tele-operation entry but they can utilize this space anyway they wish.

Example One: A single tele-operated robot.

Example Two: Two tele-operated robots as long as their combined size fit into the allowed 4 cubic feet maximum size allocation.

Example Three: A combination tele-operated and autonomous entry as long as their combined size fit into the allowed 4 cubic feet maximum size allocation.

Bob

**Question Two:**

**From:** Peter Bondi

**Sent:** Saturday, September 10, 2016 1:19 PM

**To:** Bob Tone

**Subject:**

Hi sir we have another issue for clarification

When it states that "Teams may also have Independent Autonomous Elements as part of their entry. These elements may possess ONLY ONE Football at a Time each and these Football(s) do NOT count against their Team's Maximum Two Footballs at a time limitation", does it refer to elements that are just independent from tele-operation but can be mounted on the robots, or physically independent from the robot when in use (as well as independent from tele-operation?)

Thanks for your help,

Peter Bondi

**Response Two:**

The reference is to footballs in the possession of elements / devices that are totally / physically independent of the robot. Any element mounted on a robot is considered part of the robot and subject to the restriction related to the number of balls.

**Question Three:**

**From:** Comisso, Gianluca (Michael Power/St Joseph)

**Sent:** Thursday, September 22, 2016 6:20 PM

**To:** Bob Tone

**Subject:** accessing question and answer forum

Hi Bob,

I hope all is well. How do you get to the question and answer forum? Also, does the ball have to be thrown into the 3 point circle or can you place it. For example, can you have an arm that reaches through the hole and drops the football in?

Cheers,

Luca

**Response Three:**

Answers are being sent directly to the team that asks the question.

Answers will be shared with all teams on the Skills/Compétences Canada web site  
<http://skillscompetencescanada.com/en/scnc-2017-contest-descriptions/>.

Robots are not allowed to touch / come in contact with the scoring structure / bin / backboard at any time.

The obvious solution is to have some variation on a 'Throw' involved in scoring either a 2 point ball or a 3 point ball but if teams can create a solution that reaches above the 2 point bin or into the Hail Mary Hole in the backboard then releases / drops a ball this would be allowed as long as **NO part of the robot touches / comes in contact with any part of the structure supporting the bin or the bin itself or the backboard.**

Note: It is not shown in the contest description images but there will be a very light weight net behind the Hail Mary Hole to catch balls and help avoid scoring errors on the part of the referee. I intend to offset this net from the back of the backboard so the netting will not prevent a ball from passing through the Hail Mary Hole.

Of course no part of a robot will be allowed to touch / come in contact with this netting.

Bob

**Question Four:**

**From:** Roger Branconnier  
**Sent:** Sunday, October 2, 2016 7:19 AM  
**To:** bobtone@rogers.com  
**Cc:** Ivan Conrad; Jeremy Nesseth  
**Subject:** Rule Clarification "Autonomous Elements"

Hi Bob,

I need some clarification on the following rule regarding the teleoperated game.

It says in the rules that Robots in Double Tele-operated Robot Entries may possess One Football each but I'm confused about this next line.

Teams may also have Independent Autonomous Elements as part of their entry. These elements may possess ONLY ONE Football at a Time each and these Football(s) do NOT count against their Team's Maximum Two Footballs at a time limitation.

Does this mean that you can have as many autonomous robots in the teleoperated game as you want or parts of your teleoperated robots have autonomous parts built in? I'm just confused about the wording "Autonomous Elements".

Could you clarify?

**Response Four:**

Hi Roger,

Teams must adhere to the 4 cubic feet maximum size for their tele-operation entry but they can utilize this space anyway they wish.

Example One: A single tele-operated robot.

Example Two: Two tele-operated robots as long as their combined size fit into the allowed 4 cubic feet maximum size allocation.

Example Three: A combination tele-operated and autonomous entry as long as their combined size fit into the allowed 4 cubic feet maximum size allocation.

There is no size restriction placed on the Autonomous Robots intended to participate in the Autonomous Only Competition other than they need to be able to move within the available court space without damaging the court.

The reference is to footballs in the possession of elements / devices that are totally / physically independent of the robot. Any element mounted on a robot is considered part of the robot and subject to the restriction related to the number of balls.

Bob

**Question Five:**

**From:** Phillips, Derick

**Sent:** Monday, October 3, 2016 5:17 PM

**To:** [bobtone@rogers.com](mailto:bobtone@rogers.com)

**Subject:** Question About Robotics Challenge

Good day Bob,

The question our team has is, can the football tees be intentionally moved around during game play in the tele-operated game?

Thanks

*Derick Phillips*

Science, History & Technology Teacher, NPSS

Mentor, Skills Canada Robotics

**Response Five:**

Hi Derek

The football tees will be fixed in place and cannot be moved by a robot.

Moving the football tees would be the equivalent of damaging the court and this is not allowed.

Bob

**Question Six:**

**From:** Ian McTavish

**Sent:** Tuesday, October 11, 2016 3:32 PM

**To:** [bobtone@rogers.com](mailto:bobtone@rogers.com)

**Subject:** Robotics Contest Description

A couple of questions regarding the robotics Contest Description:

The stands are 'fixed' in place - does this mean they are physically attached to the plywood or they start in a set location but can be moved?

With the teleoperated robots if we were to build 2 does the total volume for both robots combined equal 4, can a camera be used if the camera is used for vision processing and no signal is sent to the driver other than an number representing the distance to the target?

Sincerely,  
Ian McTavish

**Response Six:**

Hi Ian,  
Here are the responses to your questions.

The stands are 'fixed' in place - does this mean they are physically attached to the plywood or they start in a set location but can be moved?

Response: Teams **cannot move** the football stands at any time during game play.

With the tele-operated robots if we were to build 2 does the total volume for both robots combined equal 4

Proposed Response: Teams **must adhere to the 4 cubic feet** maximum size for their tele-operation entry but they **can utilize this space anyway they wish**.

Example One: A single tele-operated robot.

Example Two: Two tele-operated robots as long as their combined size fit into the allowed 4 cubic feet maximum size allocation.

Example Three: A combination tele-operated and autonomous entry as long as their combined size fit into the allowed 4 cubic feet maximum size allocation.

Can a camera be used if the camera is used for vision processing and no signal is sent to the driver other than an number representing the distance to the target?

Proposed Response: **YES** a camera can be used as long as the image generated by the camera is **displayed 'ON the Robot'** either in the camera's own view finder or in a mounted on the robot lap top or other **'ON the Robot'** device screen.

**Question Seven:**

**From:** Emer, David (Mary Ward)

**Sent:** Monday, October 17, 2016 10:11 AM

**To:** Bob Tone

**Subject:** Skills Contest Description - Missing dimensions for the wood block holders

Bob,

The football holder diagram is missing the lateral dimensions for wood blocks?  
 Can you please resend those distances?

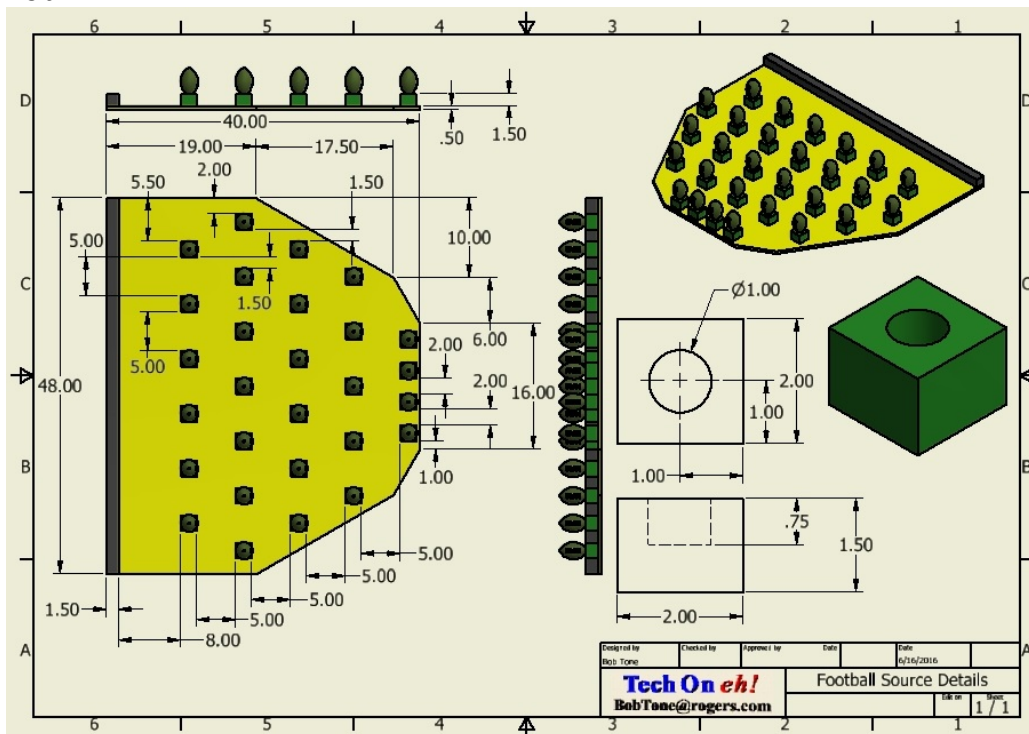
Thanks,  
 Dave

**Response Seven:**

Hi Dave,

This revised JPG provides the info you need?

Bob





**Question Eight:**

**From:** Conner Tenn

**Sent:** Thursday, October 27, 2016 10:07 PM

**To:** [bobtone@rogers.com](mailto:bobtone@rogers.com)

**Subject:** Robotics Competition Questions - Radio Transceivers

Greetings Mr Tone.

On behalf of the St. Francis Xavier Robotics team, I would like to inquire about the possibility of utilizing a 3rd party radio transceiver, operating within the 866MHz to 915MHz band. The specific model is the "rfm 95/96 LoRa radio module". We believe that utilizing this as opposed to a standard 2.4GHz radio will provide maximum range and minimal interference as well as provide lower level control over data transmitted. My question is whether or not we are allowed to incorporate this module into our design as the main radio communications device.

Thank you,

The St. Francis Xavier Robotics team.

**Response Eight:**

YES the team can use the radio they are asking about.

The scope says on page 17:

**Recommended Controllers**

It is recommended (not required) that all teams use 2.4 GHz "non-crystal" control systems on tele-operated robots.

**Question Nine:**

From: Bryan China  
Sent: Monday, October 31, 2016 11:10 AM  
To: Bob Tone

Hi NTC,

I have received this question this morning and would like some help answering this.

"Teams may also have independent autonomous elements as part of their entry. These elements may possess only one football at a time each and these footballs do not count against the or team's maximum two footballs at a time limitation"

- 1) Are participants allowed to have 4 robots. Two tele-operated, and two autonomous?
- 2) If the autonomous element is a part of the tele operated robot, would it still be allowed to hold a football whilst the tele operated robot is in possession of one?

**Response Nine:**

- 1) Unlimited amount of robots are allowed on the field as long as the complete entry as a group can fit within the 4 cubic feet size limitation at the beginning of the match.
- 2) No, the autonomous element must be completely separate from the tele-operated robot for it to not count towards the football limitation.

**Question Ten:**

From: Dimonte, Marco (Francis Libermann)  
Sent: Friday, November 4, 2016 12:01 PM  
To: Bob Tone  
Subject: robot chassis

Hi Bob. Am I to understand that we will be able to use a chassis from a radio control car given the fact that vex and Studica sell these types of robot kits ?

**Response Ten:**

Yes, Teams are allowed to use this type of equipment.

Rationale: We are striving to expand the participation base and this is why we have opened up the range of allowed equipment.

Will off the shelf equipment in their straight out of the box condition win? No!!!

R/C vehicle are designed for big spaces. We are competing on a relatively small space. R/C vehicles are really light and are not designed to carry a load. Putting an arm in the box of the truck might look cool, but will not work well.

Off the shelf equipment will require modifications to have a realistic potential to win this competition.

### Question Eleven:

From: BRYAN CHINA  
Sent: Thursday, November 3, 2016 5:08 AM  
To: Bob Tone;  
Subject: Another Question

Hello NTC,

A team has asked if we could clarify the definition of "Possession". They would like to use a shallow plow to help steer the footballs into an intake device. If they were to have more than one football within the bounds of their plow, but only one in the intake device, would this be considered in possession of more than one football?

Thanks,

Bryan China

### Response Eleven:

There is no rule specifically stating you cannot have a 'Plow Like Device'. However, if you are able use your plow to manage the movement of either a single or multiple footballs at the same time to the point that you can steer / control the movement / deliver that single or those multiple footballs to a pre-determined specific location then you are 'In Possession' of that single or those multiple footballs.

This is **allowed in the case of a single football** being controlled by the plow given you have a single football being managed / moved deliberately by your plow which is in compliance with rule that your robot can only possess one football at a time.

This is **NOT allowed in the case of 2 or more footballs** being controlled by the plow at the same time.

Two related concerns are:

\* A 'Plow Device' has significant potential to damage the 'Tees' in the original start of the game area where the footballs are located.

\* Unfortunately, depending on a Team's overall solution design we will require the referee to make a judgement call whether the action of the robot is asserting deliberate control over the ball on the floor, or, accidental and not asserting deliberate control over the ball on the floor when a loose football or multiple footballs on the court floor is / are being moved simply by the fact the robot's frame is hitting the ball when the robot is moving.

**Question Twelve:**

**From:** Dimonte, Marco (Francis Libermann)  
**Sent:** Friday, November 4, 2016 12:01 PM  
**To:** Bob Tone  
**Subject:** robot chassis

Hi Bob. Am I to understand that we will be able to use a chassis from a radio control car given the fact that vex and Studica sell these types of robot kits ?

**Response Twelve:**

Yes, Teams are allowed to use this type of equipment.

Rationale: We are striving to expand the participation base and this is why we have opened up the range of allowed equipment.

Will off the shelf equipment in their straight out of the box condition win? No!!!

R/C vehicle are designed for big spaces. We are competing on a relatively small space. R/C vehicles are really light and are not designed to carry a load. Putting an arm in the box of the truck might look cool, but will not work well.

Off the shelf equipment will require modifications to have a realistic potential to win this competition.

**Question Thirteen:**

From: Cyrus Fattahi  
Sent: Wednesday, November 9, 2016 3:43 PM  
To: [bobtone@rogers.com](mailto:bobtone@rogers.com)  
Subject: 28TH SKILLS ONTARIO COMPETITION

To whom it may concern,

My name is Cyrus Fattahi and I am from Western Technical Commercial School. We have a couple of questions about the Skills Canada 2016-17 competition. We were wondering if the pedestals that the mini footballs are movable, or if they were fixed to the ground. We were also wondering if you can have 2 robots on the field at once during the tele-op stage.

Thanks,

Cyrus Fattahi

**Response Thirteen:**

Hi Cyrus

The football pedestals are fixed in place and you cannot make any effort to move them.

Teams can have 2 robots as long as at the start of the game they are positioned in a manner that enables their combined size to fit within the allowed total team entry size allocation of 4 cubic feet.

**Question Fourteen:**

**From:** GEETHA NAIR  
**Sent:** Wednesday, November 16, 2016 10:28 AM  
**To:** [bobtone@rogers.com](mailto:bobtone@rogers.com)  
**Subject:** Skills Canada Robotics

Hi Bob

I am the teacher coordinator for Pickering High School Robotics club. While reviewing the scope, some questions came up and I am forwarding them to you. Please clarify.

1. Can a cellphone be used as a controller?
2. Can we use Arduino or Raspberry pi as controller?
3. Can a laser be used for aiming?

Thanks

Geetha Nair  
Pickering High School

**Response Fourteen:**

Hi Geetha

YES you can use a cell phone as a controller in the tele-operation football game.

YES you can use an Arduino or Raspberry pi as a controller either in conjunction with your tele-operation unit in the tele-operation football game or as the primary controller in the autonomous football game.

The use of Lasers is definitely NOT allowed.

**Question Fifteen:**

**From:** Katelynn Buchanan  
**Sent:** Tuesday, November 22, 2016 12:30 PM  
**To:** [bobtone@rogers.com](mailto:bobtone@rogers.com)  
**Subject:** motor over-powering

Hello Bob,

My name is Katelynn Buchanan, and I am from Bluewater's John Diefenbaker Senior School. I am a member of JDSS's Skills Robotics team, along with Alex Sharpe. We had a few questions regarding this year's scope and wanted to insure that emailing you is the appropriate method of communication to get these questions answered.

At this point in time, our most significant question is to do with over-powering motors. In the 2015 scope, there was a rule stating, "motors not over-voltaged by more than 50% (a 12V motor can be run at 18V)." However, in this year's and the previous year's scope there was no mention of this rule. We are curious if this rule is still in place or if it has been modified or removed.

Thank you for your time and we hope to hear from you soon,

Katelynn Buchanan and Alex Sharpe.

**Response Fifteen:**

Although, it is a great idea to keep to the manufacturers ratings. Manufacturers are trying to keeping a motor working well for a long period of time without being damaged. Therefore the amount of voltage delivered to a motor is a Team Decision and not the subject of a specific rule.



**Question Sixteen:**

**From:** Brant Churchill

**Sent:** Friday, November 25, 2016 12:25 PM

**To:** Bob Tone

**Subject:** Robotics

Hi just trying to build our robotics arena and have run into a couple issues  
 First the size you have on one drawing for the ramp says the board for the ramp should be 20x19.85 but that would be the horizontal measurements. I believe it should be 20x20.15 for the deck.

Second: What is the angle/ dimensions for the ruff plate. The diagram says the width but not the angle.

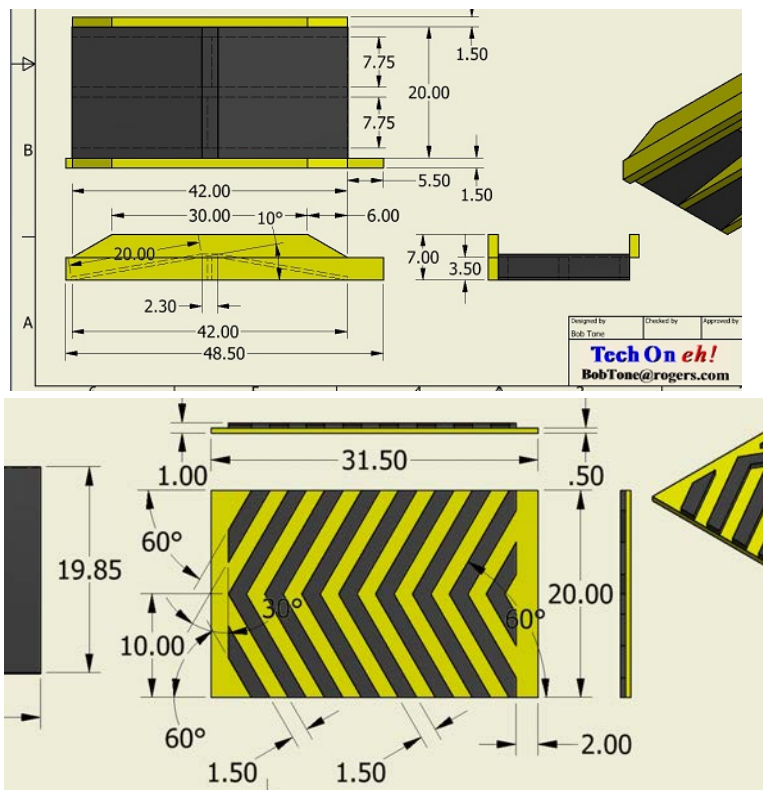
Thanks  
 BRANT

**Response Sixteen:**

Hi Brant

The Ramp Angle in question is 10 degrees.

The functional dimension for the ramp top is 20 by 20 with the measure along the slope being a rounded off number.



**Question Seventeen:**

**From:** Cameron Simpson  
**Sent:** Wednesday, November 30, 2016 10:35 AM  
**To:** [bobtone@rogers.com](mailto:bobtone@rogers.com)  
**Subject:** Question

If we are allowed 2 remote controlled robots can we have 1 remote controller per robot at the same time during the match.

**Response Seventeen:**

There are no restrictions regarding the role you assign to court side competitors.

YES BOTH competitors can operate a radio each and both competitors are free to move about within their Team's assigned driver's space.