FIRA Challenge Laws of the Game
"Fira youth Wheeled Sport Robots"

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Abstract

The rules followed apply to the wheeled sport robots. This is a student league and will be held in two classes: under 14 and under 19 years old. This is a simulation of sport competition and robots have to do various items completely autonomous.

摘要

這個規則適用於輪式運動機器人。這是一個學生聯盟,且分為兩個班:14 歲以下以及 19 歲以下。模擬一個體育比賽,機器人必須要自主的完成各種項目。

League introduction

The main purpose of wheeled sport robot league is to develop academic contest in attractive environment for students in which robots have to do various sport items like weightlifting, track and field, kicking the ball, archery and pushing obstacles. Robots will reach the specific items by following a black line through the competition. There are different colors on the field showing the exact item.

輪式運動機器人聯賽主要的目的是讓學生在有吸引力的環境中展開學術比賽而機器人需要做舉重、田徑、踢球、射箭和推動障礙等各種運動項目。機器人要達到特定項目並通過比賽中的黑線。比賽場上有不同的顏色顯示確切的項目。

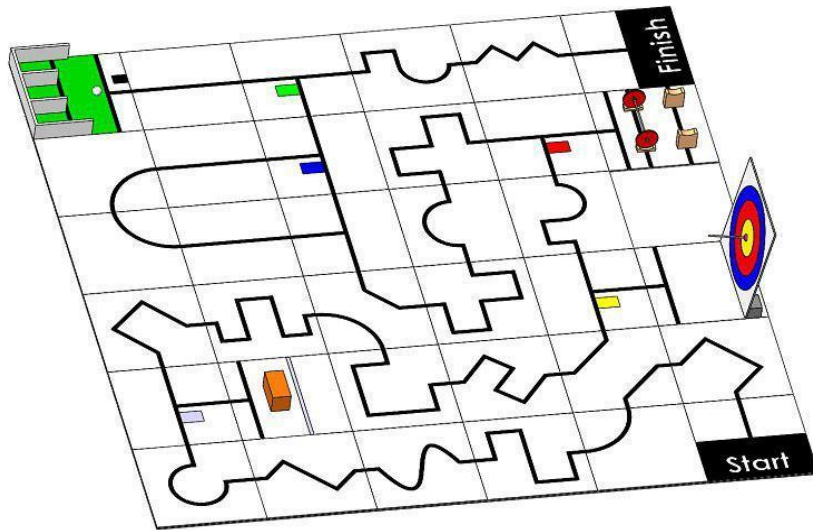Figure 1: a sample of the game field

[WSR-1]: Game field

[WSR-1]:比賽場地

[WSR-1.1]: The field's material is flat white MDF.

[WSR-1.1]:場地的材質是平坦白色的 MDF(中密度纖維板)。

[WSR -1.2]: The field is built with 60×60 cm tiles with different patterns which can be used to build different paths.

[WSR -1.2]:這個場地為 60*60 公分不同圖案的纖維板,可用於建造不同的路徑。

[WSR-1.3]: The tiles are in white (or close to it) either matte or shiny.

[WSR-1.3]:纖維板為白色的(或靠近白色),不是磨砂的就是有光澤的。

[WSR-1.4]: there might be some rippling or spaces within 5 mm between tiles. Of course the contest committee will try to minimize this problem.

[WSR-1.4]:纖維板間可能會有 5 毫米以內的花紋或間隙。競賽委員會當然會盡量減少這個問題。

[WSR-1.5]: Tiles layouts may be different in each level.

[WSR-1.5]:纖維板路徑的設計可能在每個級別都不同。

[WSR-1.6]: There are different patterns for tiles. Here is some sample of patterns in the picture above.
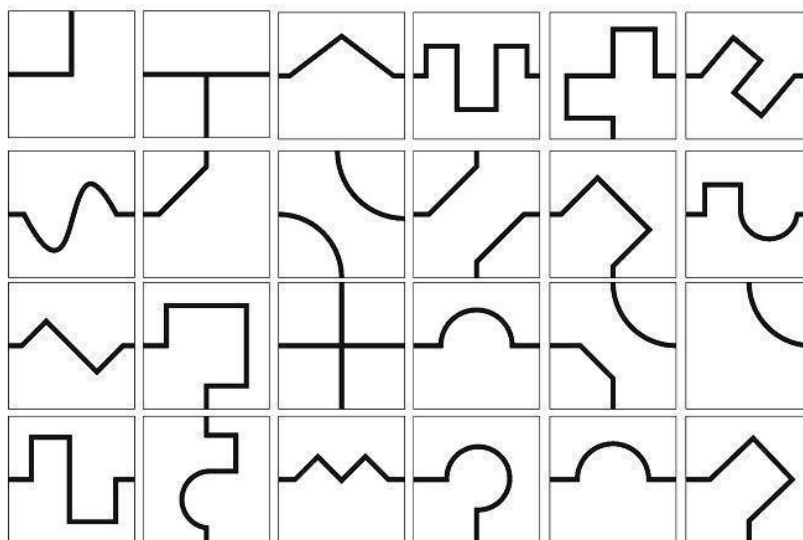
[WSR-1.6]:纖維板會有不同的圖案。以下圖片為一些圖案的範例。

Figure 2: The tile samples

圖 2:纖維板範例

[WSR-2]: path

[WSR-2]:路徑

[WSR-2.1]: The black lines have the width of 20±3 mm.

[WSR-2.1]:黑色線的寬度為 20±3 毫米。

[WSR-2.2]: There might be some gaps trough the path. The maximum length of gaps for U14 is 5 and for U19 is 10 cm.

[WSR-2.2]:通過道路時可能會有一些間隙。U14 最大的間隙長度為 5 公分，而 U19 最大間隙長度是 10 公分。

[WSR-2.3]: The minimum angle in path is 70 °

[WSR-2.3]:路徑中最小的角度為 70 度。

[WSR-2.4]: The minimum space between two paths or a path and the edge of arena is 12 cm.

[WSR-2.4]:兩條路徑之間或路徑與場地邊緣之間的最小間距為 12 公分。

[WSR-3]: **Item's colors**

[WSR-3]:*物品的顏色*

[WSR-3.1]: Each sport item has its own particular color. These colors are shown in the table below.

[WSR-3.1]:每個運動項目都有特定的顏色。顏色如下表所示。

	Color	Item
1	Green	Football
2	Blue	Track & Field
3	Red	Weightlifting
4	Yellow	Archery
5	steel	Pushing obstacles

	顏色	項目
1	綠色	足球
2	藍色	田徑
3	紅色	舉重
4	黃色	射箭
5	灰色	推動障礙

[WSR-3.2]: colors have 12×8 cm dimensions.

[WSR-3.2]: 顏色的尺寸為 12*8 公分。

[WSR-3.3]: All the colors are placed 4cm before the intersection and are attached to route lines by their width.
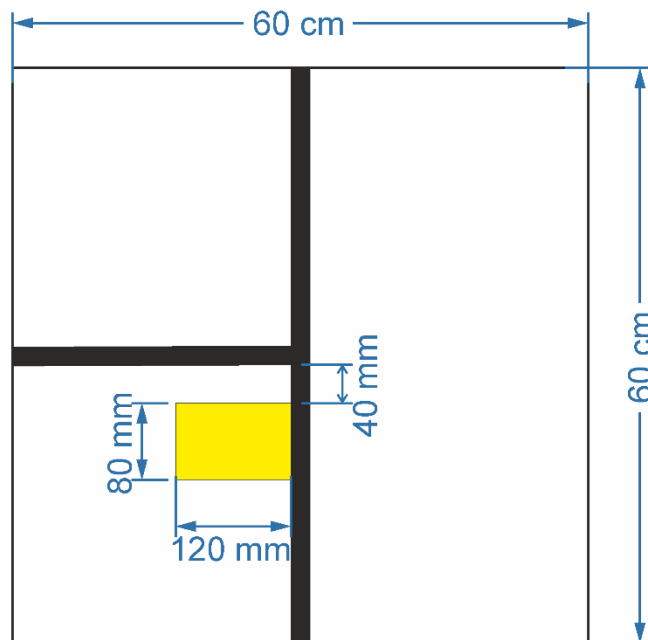
[WSR-3.3]: 所有的顏色都放置在路口前 4 公分處，並按照路線的寬度連接。

Figure 3: The color tile dimensions

圖 3:顏色纖維板的尺寸

[WSR-3.4]:   There might be no color on some intersection which means robot has to continue the route straightforward.

[WSR-3.4]:有些路口可能沒有顏色，意味著機器人必須直接繼續原本路徑。

[WSR-3.5]: The angle of intersections is 90 degrees.

[WSR-3.5]:路口的角度為 90 度。

[WSR-3.6]: The item's colors might be either in the right or left side of lines. In this case if the color is on the right side it means that the item is on the right and if it is on the left, the item is also on the left.

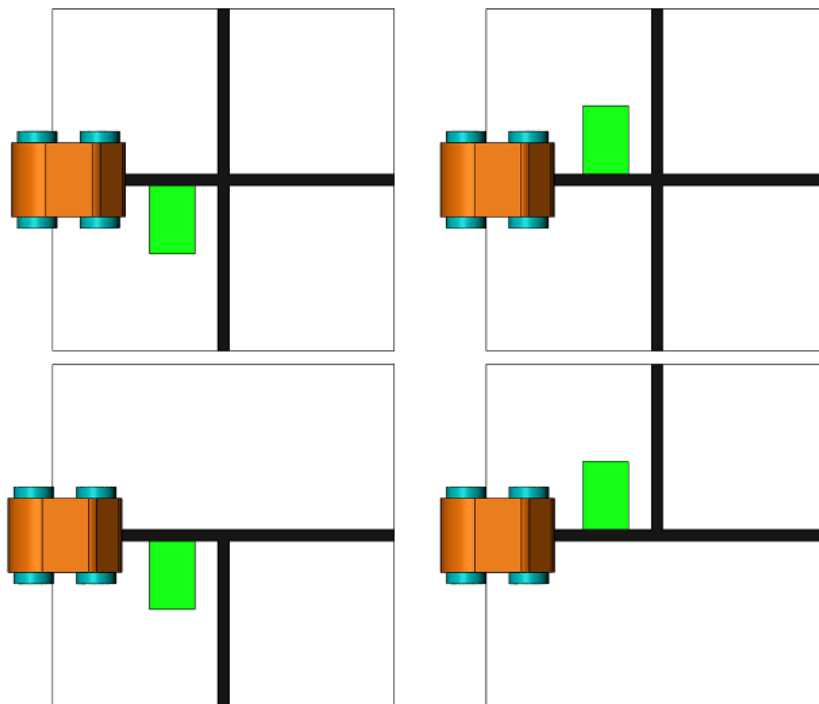[WSR-3.6]:項目的顏色可能在線的右側或是左側。在這種情況下，如果顏色位於右側，則表示該物品位於右側，如果顏色位於左側，則該物品也位於左側。

Figure 4: The position of the item's color

圖 4:項目顏色的位置

[WSR-4]: **Running race**

[WSR-4]:跑步比賽

[WSR-4.1]: The color for this item is blue.

[WSR-4.1]:這個項目的顏色為藍色。

[WSR-4.2]: In this item robot meet a loop which has to round off for specific number. The number will be changed for each level and will be announced before quarantine time.

[WSR-4.2]:在這個項目中，機器人遇到了一個必須四捨五入的特殊循環數字。每個級別的數字都會改變，並且會在 quarantine 時間前公佈。

[WSR-4.3]: The number of tiles in the loop might be different. In this section the route is either straight or curved and the lines with broken angles are not used.

[WSR-4.3]:循環中的纖維板數可能不同。在本節中，路線可以是直線或是曲線，且不會有有角度的線。

[WSR-4.3.1]: for example, If the announced number of rounds is 3, robot has to inter the color marked side of the intersection. Then continue the route in until reaching the blue color again and has to go over for two more times (a total of 3 rounds). After finishing the third round robot has to continue the path and exit from the tile.

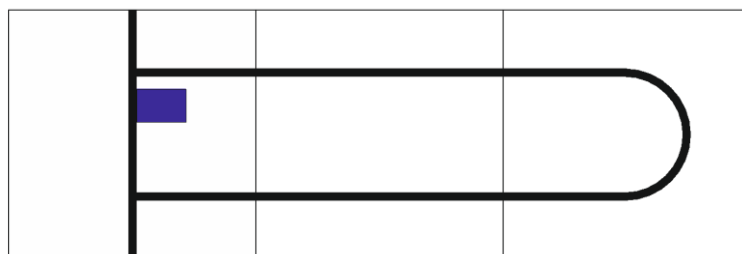[WSR-4.3.1]:例如，如果公布的回和數是 3，機器人必須標記顏色在路口的一側。然後繼續路線直到再次到達藍色，並且必須再次進行兩次(總共 3 回合)。完成三回合後機器人必須繼續路線並從纖維板中退出。

Figure 5: Track and Field item

圖 5:田徑項目

[WSR-5]: **Weightlifting**

[WSR-5]:舉重

[WSR-5.1]: The color for this item is red.

[WSR-5.1]:這個項目的顏色為紅色。

[WSR-5.2]: The weights are built with CDs and screwing bar with 8 mm thickness and the length of 350mm, 4 washers and 4 nuts. The distance of CDs is 300±5 mm.

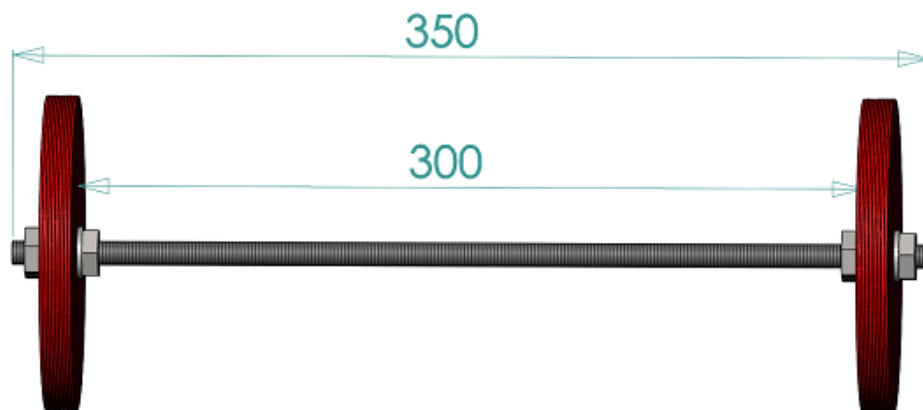[WSR-5.2]:重量是用 CD 片、8 毫米厚 350 毫米長的螺絲釘、4 個墊圈和 4 個螺帽所組成的。CD 片的距離是 300±5 毫米。

Figure 6: weight's measures

圖 6:重量的尺碼

[WSR-5.3]: The weights are built with 10 CDs in each side (20 CDs overall).

[WSR-5.3]:重量為每一邊 10 張 CD 片（總共 20 張 CD 片）。

[WSR-5.4]: Robot has to pick up the weight from initial position and place it on marked station. The stations are fixed on the field.

[WSR-5.4]:機器人必須從初始位置撿起重物並將它放置在標記的位置。這些會固定在場上。

[WSR-5.5]: Height of initial station is 20mm.

[WSR-5.5]:起始的高度為 20 毫米。

[WSR-5.6]: The height of station for placing the weight in U14 is 60mm and for U19 is 100mm.
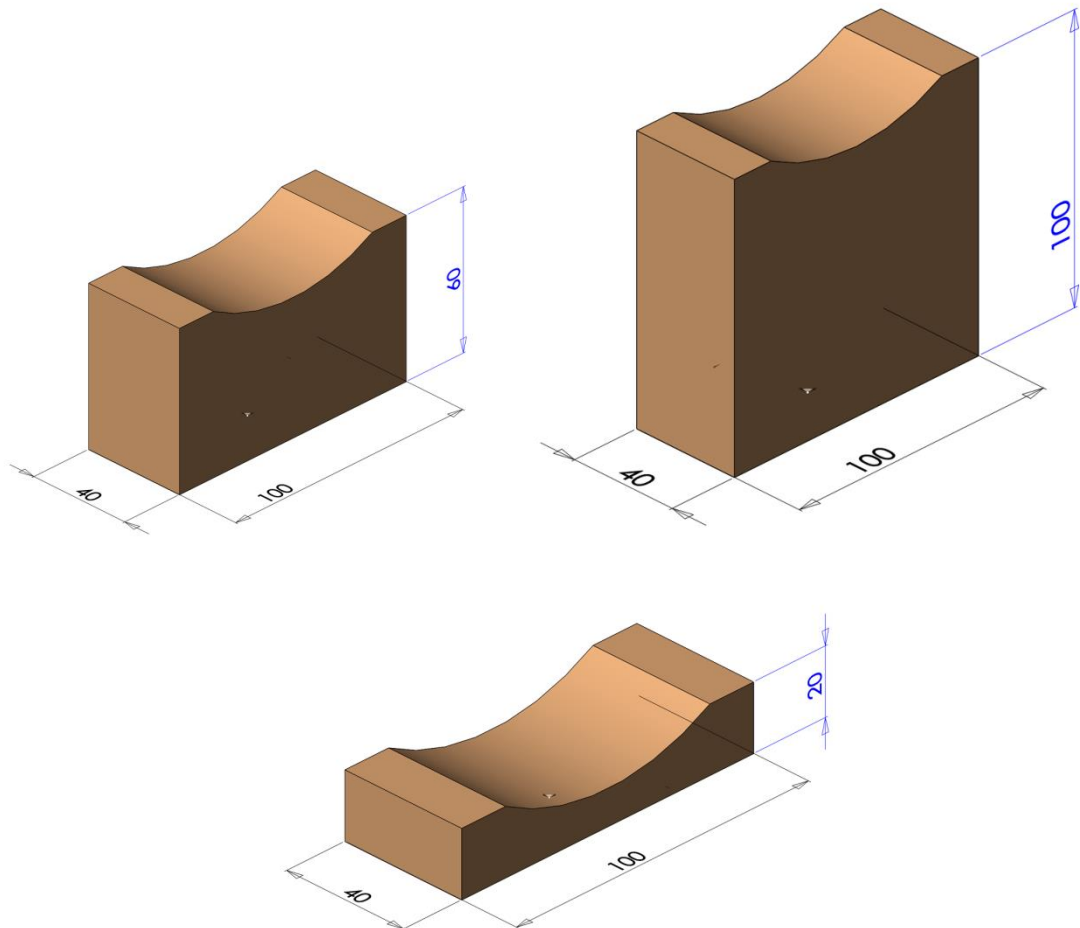
[WSR-5.6]:用於放置重量地方的高度，U14 為 60 毫米、U19 為 100 毫米。

Figure 7: Appearance and dimensions of the stations (in millimeters)
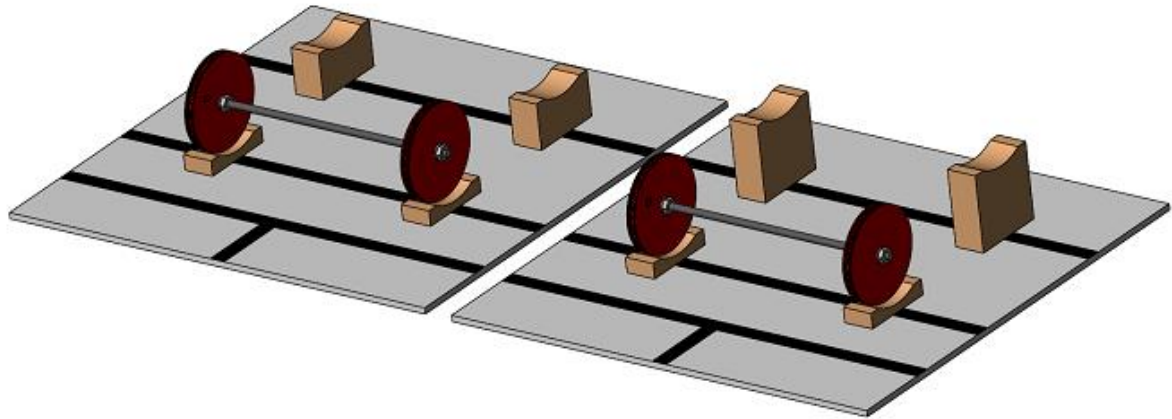
圖 7:站的外觀和尺寸(毫米)

Figure 8: The position of weights in U19 (the right one) U14 (the left one)

圖 8:U19 的重量位置(右側)U14(左側)

[WSR-5.7]: The distance between center of pickup position and placement position is 220mm.

[WSR-5.7]:檢取位置中心與放置位置之間的距離為 220 毫米。

[WSR-5.8]: The height of the weight's bar from floor in initial position is 65±3 mm.
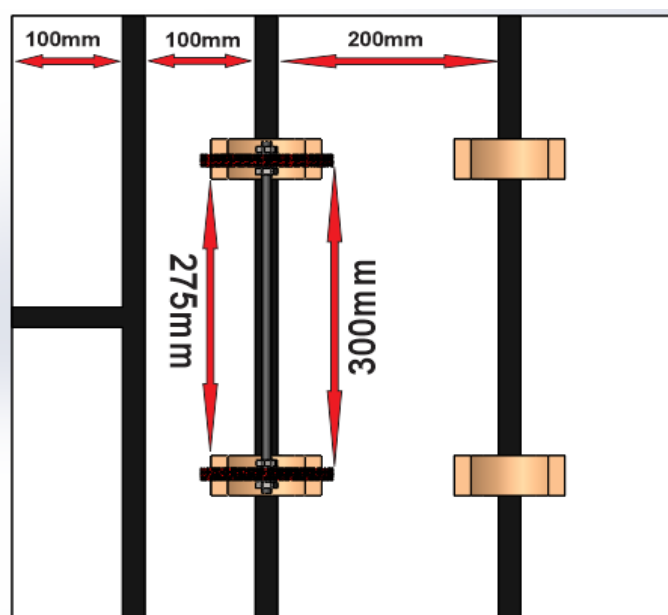
[WSR-5.8]:在初始位置,重量條從地面算起的高度為 65±3 毫米。

Figure9: Space in between lines in weightlifting item

圖 9:舉重項目與線之間的間隙

[WSR-5.9]: The item is fully scored when the weight is positioned completely on the station and the robot has exited the item tile.

[WSR-5.9]: 當重量完全放置在站上且機器人已經退出纖維板時,該項目就會被評分。

[WSR-6]: **Pushing obstacles**

[WSR-6]: **推動障礙物**

[WSR-6.1]: the color for this item is steel.

[WSR-6.1]:這個項目的顏色為灰色。

[WSR-6.2]: In this item, robot must push the obstacle so that to cross the steel colored line.

[WSR-6.2]:在這個項目中,機器人必須推動障礙物穿過灰色的線。

[WSR-6.3]: Obstacle is a cube with 20×10×10 cm measurements. The obstacle stands vertically on the field. It is made of hollow MDF with a thickness of 16mm with the weight less than 500 grams.

[WSR-6.3]:障礙物是一個 20×10×10 公分的立方體。障礙物在場地上是垂直站立的。他由中空 MDF 製成,厚度為 16 毫米,重量小於 500 克。

[WSR-6.4]: The color of the obstacle is orange.

[WSR-6.4]:障礙物的顏色為橘色。
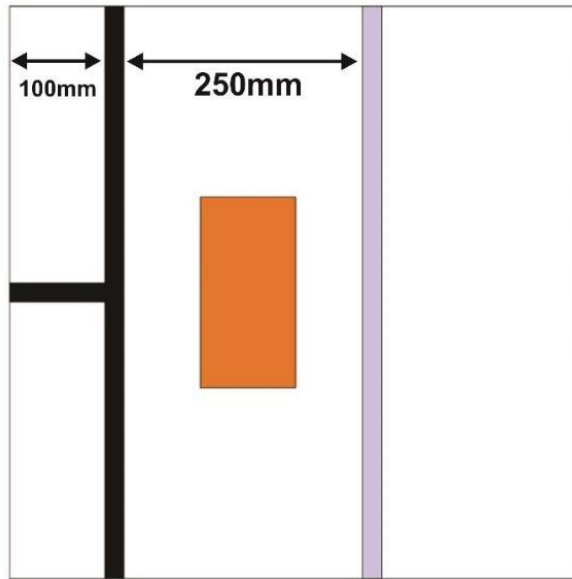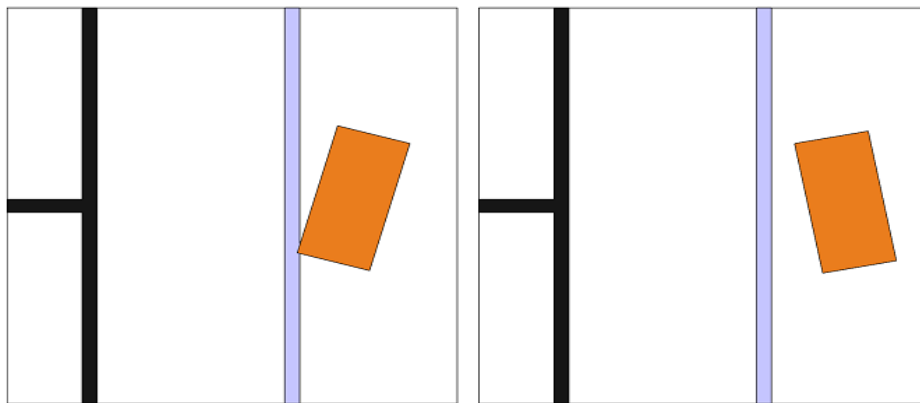
Figure 10: The obstacle's situation in the item

圖 10:該項目中的障礙物

[WSR-6.5]: After pushing the obstacle if it touches the steel colored line, no scores are given.

[WSR-6.5]:如果碰到灰色線後才推倒障礙物，則不會有分數。

B) The wrong form of pushing   **A) The true form of pushing**

B)錯誤的推倒形式   **A)正確的推倒形式**

Figure 11: The correct position of obstacle after pushing

圖 11:推倒障礙物的正確位置

[WSR-6.6]: during and after pushing, the obstacle can't be moved by team.

[WSR-6.6]:在推動期間以及推動之後，障礙物都不能被隊伍移動。
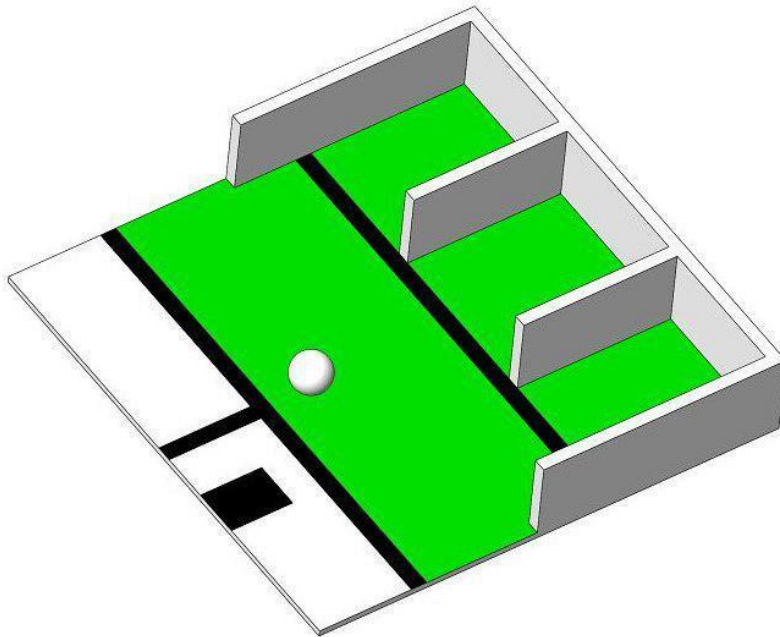
[WSR-7]: **kicking the ball**

[WSR-7]:踢球

Figure 12: Appearance of the goals

圖 12:目標的外觀

[WSR-7.1]: The color for this item is green.

[WSR-7.1]:這個項目的顏色為綠色。

[WSR-7.2]: A white pink pong ball is used in this item.

[WSR-7.2]:這個項目會使用到一顆白色的乒乓球。

[WSR-7.3]: To keep the ball steady on the tiles and avoid moving, a circular shaped wire is used beneath the ball.

[WSR-7.3]:為了保持球穩定的在纖維板上避免移動，在球的下方使用圓形的線。

[WSR-7.4]: The direction of shooting is shown by a 4×4 cm black rectangle. This rectangle is 4 cm away from the path and the kicking line.

[WSR-7.4]:射門的方向由 4×4 公分的黑色矩形表示。這個矩形距離路徑和踢線 4 公分。

[WSR-7.4.1]: If the rectangle is in the right side, the ball has to be kicked in the right goal and if it is on the left side, the aim is the left goal. If the ball takes place in the middle goal, half of the score is given.

[WSR-7.4.1]:如果矩形位於右側，則必須將球踢入右側球門;如果球門位於左側，則目標是左側球門。如果球在中間球門，則得一半的分數。

[WSR-7.5]: The robot cannot carry the ball toward the gates and has to kick the ball by one shoot.

[WSR-7.5]:機器人不能將球帶往球門，並且必須完成一次性的踢球射門。

[WSR-7.6]: The score is awarded when the ball has completely passed the goal line. Referee will judge if the ball has fully crossed the line.

[WSR-7.6]:當球完全通過球門線時即為得分。裁判將會判斷球是否已經越過界線。

[WSR-7.7]: The ball must pass the goal line before robot exits the tile. If ball passes the goal line and the robot had been exited the tile, no score will be given.

[WSR-7.7]:在機器人離開纖維板之前，球必須通過球門線，如果球通過球門線且機器人已經離開纖維板，則不會得到分數。

[WSR-7.8]: There is no problem if the ball exits the goal after crossing the line completely. The score will be given.

[WSR-7.8]: 如果球完全通過線後離開球門，也會得到分數。

[WSR-7.9]: The gates dimensions and the spaces between lines is shown in the picture below.

[WSR-7.9]:下圖顯示了球門的尺寸和線之間的間隙。
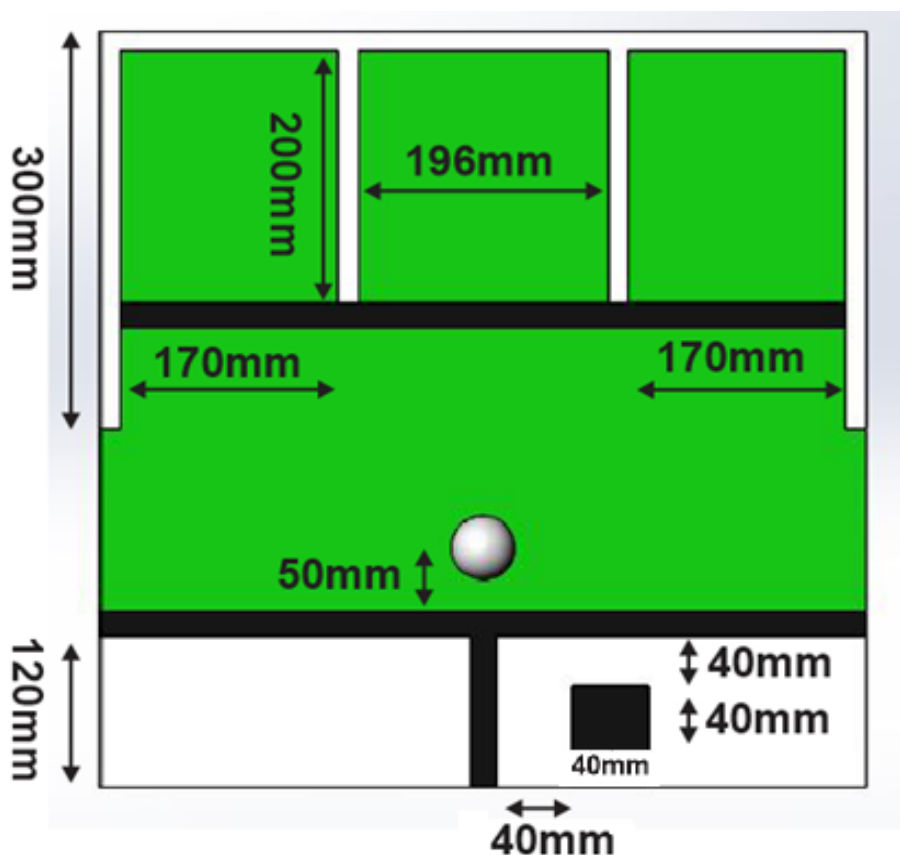
Figure 13: Gates dimensions and signs in this item

圖 13:在這個項目的球門尺寸和符號

[WSR-8]: **Archery**

[WSR-8]:射箭

[WSR-8.1]: The color for this item is yellow.

[WSR-8.1]:這個項目的顏色為黃色。

[WSR-8.2]: The target is made up of 3 colors: yellow, red & blue. The diameter of each circle is shown in the picture below.

[WSR-8.2]: 標靶由 3 種顏色組成:黃色、紅色和藍色。每個圓的直徑如下圖所示。

Figure 14: The target measures

圖 14:標靶的測量

[WSR-8.3]: The distance of target from the shooting line is 60 cm in U14 and 100 cm in U19.

[WSR-8.3]:標靶距離射擊線 U14 為 60 公分，U14 為 100 公分。

[WSR-8.4]: Before throwing the arrow, robot has to completely stand behind the shooting line.

[WSR-8.4]:射箭之前，機器人必須完全站在射擊線的後面。

[WSR-8.5]: The throwing should be like archery. Using springs, Air or Gas pressure, Air gun, etc. is forbidden.

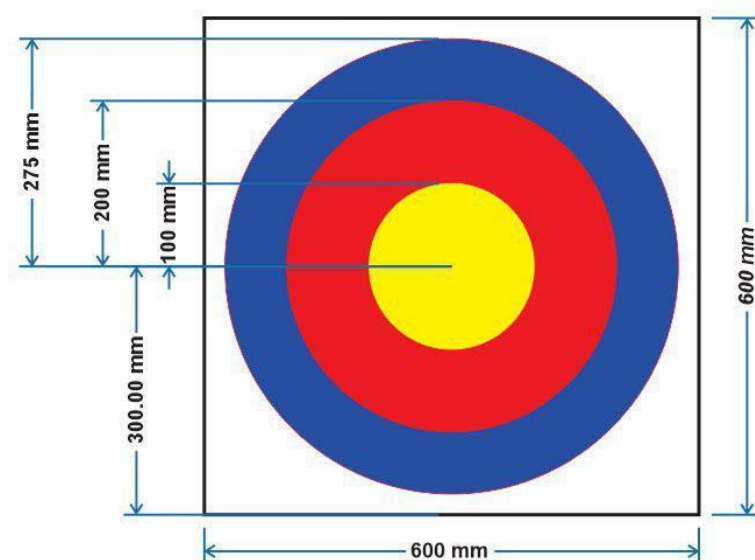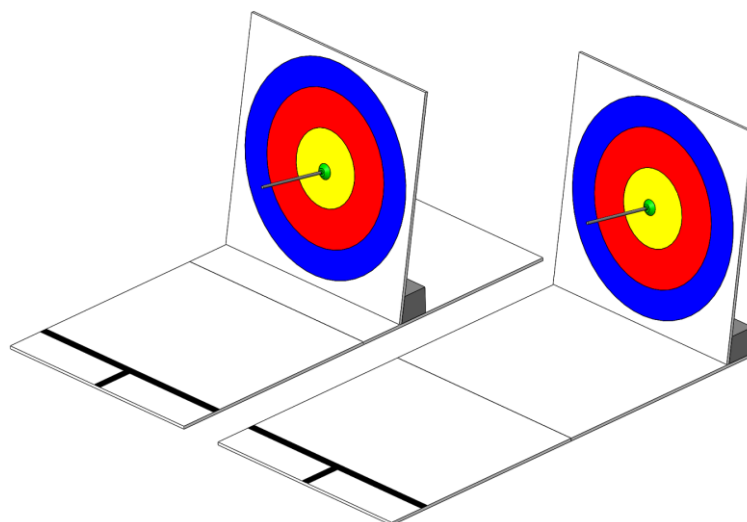[WSR-8.5]:投射的機制要和射箭一樣。禁止使用彈簧、空氣或氣壓以及空氣槍。

[WSR-8.6]: The arrow's length can be 50 up to 250 mm. And the thickness can be 2 to 15 mm.

[WSR-8.6]:箭頭的長度可以是 50 到 250 毫米。厚度可以是 2 到 15 毫米。

[WSR-8.7]: The tip of the arrows should be fitted with a sucker in order to stick to Seibel after being thrown.

[WSR-8.7]:箭頭尖端應裝上一個吸盤，以利於在投射後黏在 Seibel 上。

[WSR-8.8]: The Seibel will be polished, so that the arrow will stick to it.

[WSR-8.8]: Seibel 會是光滑的，以便讓箭頭黏上去。

[WSR-8.9]: Teams can manually load the arrow before the competition, in calibration time or at each restart.

[WSR-8.9]:參賽隊伍可以在比賽前的校準時間或重新啟動時手動裝上箭頭。

[WSR-8.10]: At each try, robot can only throw one arrow.

[WSR-8.10]:在每次測試時，機器人只能射一支箭。

[WSR-8.11]: If the arrow hits the common area between 2 colors, scoring is like the picture below.

[WSR-8.11]:如果箭頭碰到兩種顏色之間的區域，則得分如下圖所示。
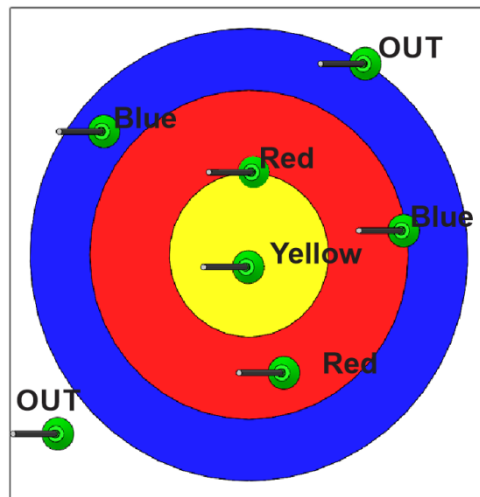
Figure16: Scoring in each situation

圖 16:每一種情況的得分數

[WSR-8.12]: The referee shall determine the location of the arrow with the Seibel.

[WSR-8.12]:裁判應確定箭頭與 Seibel 的位置。

[WSR-8.13]: The score is counted when the robot is completely out of archery tile. This can be done by moving backward and exiting the tile. If the arrow gets parted from Seibel before robot leaving the tile, team will lose some points.

[WSR-8.13]:當機器人完全離開射箭纖維板時，計算得分。可以透過向後移動並退出纖維板來完成。如果在機器人離開纖維板之前，箭頭從 Seibel 掉下來，則隊伍將會損失一些分數。

[WSR-8.14]: Because of competition safety protocols, robots using arrows with no suckers, are not allowed in the competition.

[WSR-8.14]:由於比賽的安全協定，在比賽中不能使用不帶吸盤箭頭的機器人。

[WSR-8.15]: Attention!! Not respecting the safety hints in throwing the arrows and causing disturbance for other teams or audience in the form of joking etc., may cause the exclusion of team and the responsibility is entirely to the detriment team.

[WSR-8.15]:注意!!不尊重射箭時的安全指示以及以開玩笑的方式干擾其他隊伍或觀眾，可能會造成隊伍禁賽且責任完全為損隊伍。

[WSR-9]: **How the contest is held**

[WSR-9]:比賽是如何舉行的

[WSR-9.1]: competition may have several rounds.

[WSR-9.1]:比賽可能會有數回合。

[WSR-9.2]: Before the start of each round, all robots are quarantined.

[WSR-9.2]:在每個回合開始之前，機器人都會被 quarantined。

[WSR-9.3]: One of team members is known as captain. Only team captain has the permission to touch the robot.

[WSR-9.3]:隊員中有一員為隊長。只有隊長才有權利觸碰機器人。

[WSR-9.4]: Each round takes a time around 8 minutes. This time may change due to the field size.

[WSR-9.4]:每一回合都需要 8 分鐘左右的時間。由於場地大小不同，時間可能會變。

[WSR-9.5]: Teams have 3 minutes to calibrate their robot.

[WSR-9.5]: 隊伍有 3 分鐘的時間來校準他們的機器人。

[WSR-9.5.1]: After 3 minutes, robot has to start the contest. If it is not able to start, it will lose that round.

[WSR-9.5.1]:3 分鐘後，機器人必須開始比賽。如果無法啟動，則將失去那一回合。

[WSR-9.5.2]: If the team doesn't need to calibrate, it can start the competition.

[WSR-9.5.2]:如果隊伍不需要校準，就可以開始比賽。

[WSR-9.5.3]: In the calibration time, team can only calibrate the colors on the field and are not allowed to test the items or move the robot on the tiles.

[WSR-9.5.3]:在校準時間內，隊伍只能校準場上的顏色，不允許測試項目或移動纖維板上的機器人。

[WSR-9.5.4]: After calibration time, team should not give any information to robot. Using any button except on/off switch or start switch is not allowed.

[WSR-9.5.4]:校準時間後，隊伍不能向機器人提供任何訊息。不允許使用除了 on/off 開關或啟動開關之外的任何按鈕。

[WSR-9.6]: During the round, any contact with robot will cause a restart. Team will lose some points for each restart.

[WSR-9.6]:在比賽回合中，任何與機器人的接觸都將導致比賽重新開始。每次重新開始時，隊伍將會失去一些分數。

[WSR-9.7]: Robot has to follow the path correctly. using shortcut ways or start to move in the opposite directions, is called a fault and must restart.

[WSR-9.7]:機器人必須正確的遵循路徑。超捷徑或向起點的相反向移動,都是錯誤的,必須重新開始。

[WSR-9.8]: In each restart, the team captain can decide whether to place the robot on the beginning or end of the current tile.

[WSR-9.8]:在每次重新開始時,隊長可以決定是否將機器人放置在當前區域的開始或結束處。

[WSR-9.9]: In the item tiles, if a restart is needed, robot has to be placed before the color tile.

[WSR-9.9]: 在這個項目的纖維板中,如果需要重新開始,機器人必須放置在這個顏色的纖維板前。

[WSR-9.10]: In each restart, items will be put in their initial position by referees. Items cannot be moved before the restart announcement.

[WSR-9.10]:在每次重新開始時,會由裁判放置在初始位置。在宣告重新開始之前,無法移動物品。

[WSR-9.11]: Robot can test each item up to 4 times (3 restart). After this, robot has to be placed after the item tile.

[WSR-9.11]:機器人可以測試每個項目最多 4 次(3 次重新)。在此之後,機器人必須放置在項目的纖維板之後。

[WSR-9.12]: If the robot has earned some scores in one item and the captain decides to restart in order to earn more scores, the previous score will be deleted and the new one will be considered even if the new score is zero.

[WSR-9.12]:如果機器人在一個項目中獲得了一些分數，隊長可以決定要不要重新再一次獲得更高的分數，則之前的分數就會被刪除，即使新的分數為零，新的分數也會列入考慮。

[WSR-9.13]: after finishing the item, if robot did not get back to the path, it can be placed manually after the item tile after requesting a restart. In this case, team will lose some points from the current item.

[WSR-9.13]:在完成這個項目之後，如果機器人沒有返回路徑，則可以請求再重新一次，再項目纖維板之後手動放置。在這種情況之下，隊伍會從當前項目中失去一些分數。

[WSR-9.14]: the captain can request a restart at any time and with referee's verification, he can place the robot on the restart point.

[WSR-9.14]:隊長可以隨時要求重新開始並且經過裁判同意，他可以將機器人放置在新起點上。

[WSR-9.15]: Robot will earn some points after crossing each tile. The score is awarded when the robot has passed the tile correctly and completely and has entered the new one.

[WSR-9.15]:通過每一個纖維板之後，機器人將會獲得一些分數。當機器人正確且完全通過纖維板並進入新的纖維板時，就會得分。

[WSR-9.16]: In the situation that the scores of two teams are the same, the team with less time record will be placed higher in ranking. If the time records are the same either, the lighter robot will have a higher rank.

[WSR-9.16]:在兩組隊伍分數相同的情況下，時間較少的隊伍排名會比較高。如果時間相同，則較輕的機器人排名較高。

[WSR-9.17]: Team captain can end the round at any time, by announcing the end of activity, in order to save time.

[WSR-9.17]:為了節省時間，隊長可以隨時宣告終止來結束這一回合的比賽。

[WSR-10]: **The scoring statues**

[WSR-10]:得分的依據

[WSR-10.1]: there is example of how the scoring will be on the table below. These scores are assumptions and may change on the competition day.

[WSR-10.1]:下面表格中列出一些評分。這些分數是假設的，可能在比賽當天發生變化。

Row	Activity	Score
1	Putting the weight on the station	180
2	Kicking the ball in correct goal	120
3	Kicking the ball in the middle goal	80
4	Kicking the ball in the wrong goal	0
5	Pushing the obstacle completely	100
6	Throwing the arrow in yellow Seibel	180
7	Throwing the arrow in red Seibel	120
8	Throwing the arrow in blue Seibel	80
9	The arrow being separated before exiting the tile	-40
10	Track and field item for each tile per round (*)	10
11	Full stop in the last tile	40
12	Crossing each tile	10
13	restart	-10
14	Not to find the path after finishing item (**)	-30

	行為	分數
1	把重量放在站上	180
2	將球踢往正確的球門	120
3	將球踢進中間球門	80
4	將球踢進錯誤的球門	0
5	完成推動障礙物	100

6	射箭射中黃色的 Seibel	180
7	射箭射中紅色的 Seibel	120
8	射箭射中藍色的 Seibel	80
9	箭在離開纖維板前掉下來	-40
10	每場每回合的田徑項目比賽(*)	10
11	停在最後一個纖維板上	40
12	通過每一個纖維板	10
13	重新開始	-10
14	完成項目後找不到路徑(**)	-30

[WSR-10.2]: (*) In track and field item, robot will earn 10 point for each tile per round. The score will be awarded when the robot has leaves the tile after doing all the rounds and is continuing the rest of the path. For example, in figure1, it has been announced that the robot has to do 3 rounds, there are 6 tiles in figure 1 loop. Rounding 3 times, will make it 18 tiles so after the last round, when the robot exits the l

ast tile of the loop and enters a new one, the score of 180 obtained.

[WSR-10.2]: (*)在田徑項目中，機器人每回合會獲得 10 分。當機器人完成所有回合之後離開纖維板並繼續其餘路徑，將會得分。例如，在圖 1 中，已經公布機器人必須完成 3 回合，在圖 1 中有 6 個纖維板。執行 3 次，在最後一回合後，總共會有 18 片纖維板，當機器人退出最後一個纖維板進入一個新的纖維板時，則會獲得 180 分。

[WSR-10.3]: (**) After doing each item, if the robot couldn't get back to the path automatically, it will lose 20 points. For example, in the weightlifting item, suppose that the earned score is 120, but robot couldn't find the path after exiting the item tile, in this case the captain can put robot after the color tile and earn only 90 points. This action is not accepted in running item.

[WSR-10.3]: (**)在完成每個項目後，如果機器人無法自己回到路徑，則會扣除 20 分。例如，在舉重項目中，假設獲得的分數為 120 分，但機器人在退出項目纖維板後找不到路徑，在這種情況之下，隊長可以將機器人放在那個顏色的纖維板上，但只能獲得 90 分。這個動作不適用於跑步項目。

[WSR-11]: **Robot**

[WSR-11]:機器人

[WSR-11.1]: each team can only have one robot.

[WSR-11.1]:每一支隊伍只能有一個機器人。

[WSR-11.2]: Robots must have batteries and any external power supply is not accepted.

[WSR-11.2]:機器人必須裝上電池，並且不接受任何的外部電源。

[WSR-11.3]: All measurements related to the rules may have 10 percent tolerance.

[WSR-11.3]:所有跟規則有關的尺寸測量可能會有 10%的誤差。

[WSR-11.4]: The competition is held in open platform way. meaning, robots can be similar in terms of appearance and hardware, but teams must be aware of all of their robot's details. The teams not knowing the general stuff about their robot (electronic, mechanic & programming) will not be allowed to participate in contest.

[WSR-11.4]:比賽以開放式的平台進行。也就是說，機器人在外觀和硬體方面可以相似，但隊伍必須知道他們機器人的所有細節。不知道他們機器人的東西(電、機構和程式)將不能參加比賽。

[WSR-11.5]: Length and width of the robot should not exceed 25 cm. but after starting the round robot can change into bigger size automatically. There are no limits in height of robots.

[WSR-11.5]:機器人的長度和寬度不能超過 25 公分。但啟動後，機器人的範圍可能自動變成更大的尺寸。機器人的高度沒有限制。

[WSR-11.6]: Robot has to act automatically and any controls by teammates or external processer are forbidden.

[WSR-11.6]:機器人必須自動執行而且禁止隊友或外部處理器進行任何控制。

[WSR-11.7]: Robot should be able to do at least 1 item. The ones that only made for following the path and cannot do any items are not allowed in the competition.

[WSR-11.7]:機器人應該至少可以執行一個項目。在比賽中部允許那些只為跟隨路徑而不會執行任何項目的人。

[WSR-11.8]: Robots must not harm the competition field. Harming, includes: wheel tracks, disfiguring the items, scratching the color of field, etc. If a robot acts in a harmful way, it will lose the rest of the round.

[WSR-11.8]:機器人不能損害比賽場地。損害包括:車輪軌道、毀壞物品,刮傷場地的顏色等。如果機器人以有害的方式行動,將會失去整個回合。

[WSR-12]: **Team members**

[WSR-12]:隊伍成員

[WSR-12.1]: Team members have to be 2 – 5 people.

[WSR-12.1]:隊伍成員必須有 2 至 5 個人。

[WSR-12.2]: The competition is held in 2 classes: U14 and U19. Therefore, the ages of all members must be under 19 before the competition day.

[WSR-12.2]:比賽分為兩個階級:U14 和 U19。因此,所有成員的年齡必須在 19 歲以下。

[WSR-12.3]: Even if one member of team has the age of over 14, this team will be in U19 class.

[WSR-12.3]:即使隊伍中有一個隊員的年齡超過 14 歲，該隊伍也將分配在 U19。

[WSR-12.4]: During the competition, any contact with people over the age of 19 (couch, school officials, student's parents, etc.) is forbidden and if it is seen, team will lose the score of that level.

[WSR-12.4]:在比賽期間，禁止與 19 歲以上的人(教練、學校官員、學生家長等等)聯繫，如果被看到的話，隊伍將會失去該比分。

Good luck

Please do not hesitate to ask any questions

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