RoboCupJunior Rescue A Rules (2013)

Note: Changes from 2012 rules are highlighted in red.
Translated by RoboCupJunior Hong Kong

RoboCupJunior Rescue - Technical Committee 2013
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Preface 前言

The mission can be seen as a real-word disaster, such as an avalanche, where the rescue personnel in place need robotic assistance in dangerous areas.
任務可視爲現實世界的災難，如雪崩。於危險地區救援人員需要使用到機械人援助。

The robot has to be fully autonomous and carry out the mission with no help. This means that it must handle rough terrain (speed bumps) without getting stuck and cross snowstorms (gap in the line) where you can't see the road you're trying to follow. The robot also has to have the ability to climb mountains (the ramp).
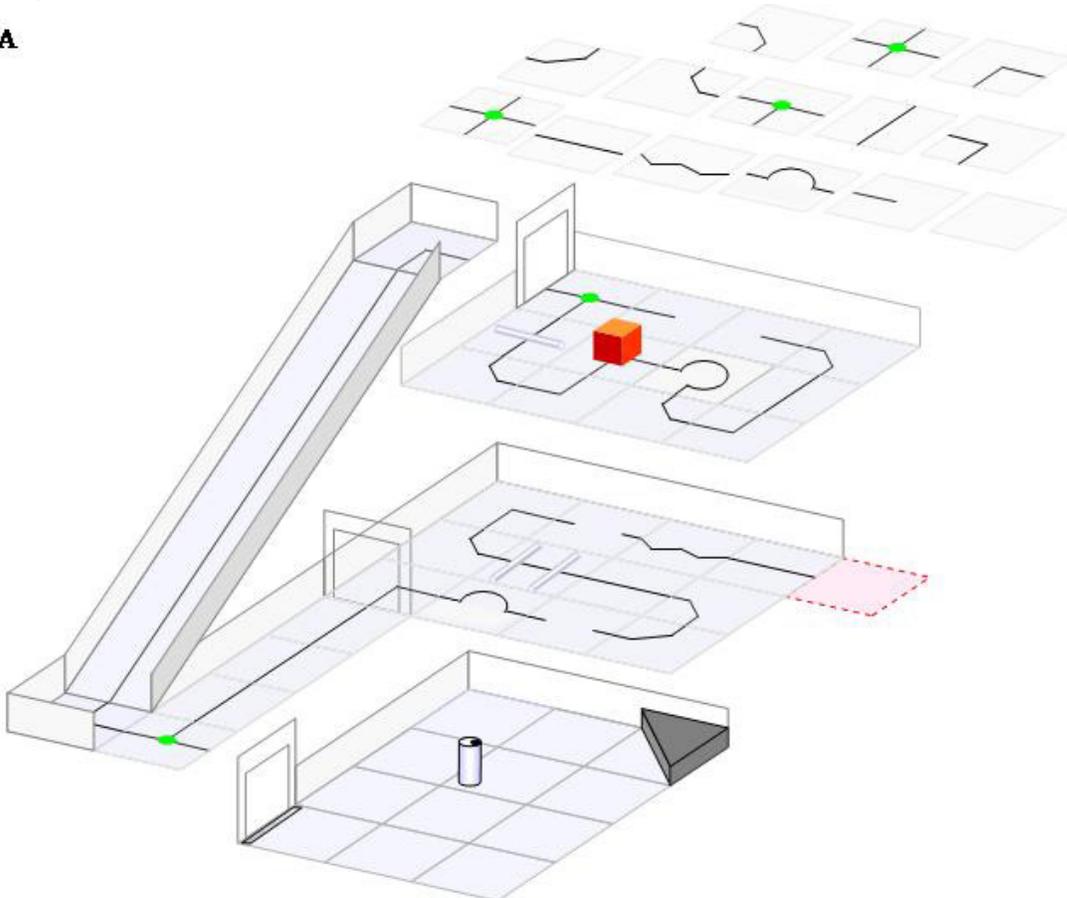該機械人爲完全自主和無需幫助下執行任務。這意味著，它必須可應付崎嶇的地形(減速坡)而沒被卡住和越過雪崩帶(斷線)，因看不見道路，機械人需要嘗試跟隨。機械人也有能力攀登山坡(斜坡)。

When the robot finally finds the victim (a soda can) they have to carefully transport it to a safe area (evacuation point) where humans can take over.
當機械人最終找到傷者(汽水罐)，需要小心地運送傷者至安全地方(撤離區)，位於人類可以接管的地方。

1. Arena 場地

Rescue-A

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1.1. Description   描述

1.1.1 The arena is modular. Each module can be thought of as a room in a building. **Rooms** may be placed adjacent to each other (on the same level horizontally) or may be stacked vertically. **Rooms** on the same level are connected by level hallways. **Rooms** on different levels are connected by a sloping hallway or ramp. A ramp will not exceed an incline of 25 degrees from the horizontal, and must have walls at least 10 cm high.

整個比賽場地為模塊化結構，單個模塊結構都可以被看成一個房間。房間可以水平連接（高度相同）或垂直疊加。相同高度的兩個房間通過一條水平走廊連接，不同高度的房間由傾斜的走廊或斜坡連接。斜坡水平傾斜度不超過25 度，並且必須有至少10cm 高的牆。

The Ramp area (hereafter known as the Ramp) consists of the ramp itself and the top and bottom platforms that connect it to the other rooms.

斜坡區域(下文稱作斜坡)由斜坡本身及上下端連接的兩個平臺共同組成。

Building plans are linked here - Suggested building instruction can be found at the official RCJ website under Rescue rules.

搭建示意圖的連結位於 – 建議的搭建教學可於RCJ官方網頁的拯救賽規下方找到。

1.2. Dimensions   尺寸

1.2.1. Each room is approximately 120cm by 90cm, with walls that are at least 10 cm high.

每個房間的尺寸為約120cm x 90cm，牆最少10cm高。

1.2.2 Hallways and the Ramp should also have walls at least 10 cm high, and approximately 30 cm wide.

走廊和斜坡的牆最少10cm高，闊約30 cm

1.2.3. Each room will have one or two doorways. Robots may enter and exit through the same doorway if intersections are used. Doorways will be 25cm x 25cm in size.

每個房間將有一或兩個門。機械人可能進入和離開時都為同一道門，如使用交叉路口。門的尺寸為 25cm x 25cm。

1.2.4 The First room in the arena may or may not have an entrance doorway. The Final room in the arena does not have an exit door.

首個房間可能有或可能沒有入口門。最後的房間沒有出口門

1.3. Floor   地板

1.3.1. The floor of each room will be a light colour (white, or close to white). The floor may be either smooth or textured (like linoleum or carpet), and may have steps of up to 3 mm in height at joins between rooms.

每個房間的地板都將是亮色(白色、或接近白色)。地板將是平坦的，或是略微有些粗糙的(像油毯或地毯)，在房間之間的接合處可能有不超過3mm高的誤差。

1.3.2. The arena should be placed in the way that the floors are leveled.

比賽場地應放置到平坦的地板上。

1.4. Line   軌跡線

1.4.1 The floor of each room is composed of 30 cm x 30 cm tiles with a black line for a robot to follow.. The black line, 1-2 cm wide, may be made with standard electrical (insulating) tape or printed onto paper or other materials. The black line forms a path on the floor. (The grid lines indicated in the drawings are for reference only.)

每個房間的地板都由 30 cm x 30 cm 的磚塊組成，印有黑線讓機械跟隨。黑線寬 1-2cm，可能為標準電線(絕緣)膠布或列印於紙張或其他物料上。黑線於地板上形成路徑。(顯示在圖畫中的網格線只供參考)

1.4.2 The line is always at least 10 cm from the nearest wall.

線與最接近的牆最少相距10cm

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1.4.3 Where the black line is used, it will enter and exit each room through the standard doorways. Straight sections of the black line may have gaps with at least 5 cm of straight line before each gap. The gap is 20 cm at most. If a gap is running along a wall, it is 30cm at most.
黑線將會經由標準的門口進入和退出各個房間。直線區的黑線可能有空隙，但每道空隙前最少有5cm長的直線。空隙最長達20cm。如空隙是沿著牆伸延，則最長可達30cm。

1.4.4 The arrangement of the tiles within each room may vary between rounds.
各個房間內的磚塊編排於不同回合間可能會有不同。

1.4.5 Due to the nature of the tiles, there may be a step and/or gap in the construction of the arena. These are not intentional and will be minimized as much as possible by the organizers.
由於磚塊的特性，於建造的場地，磚塊之間可能有的梯級或隙縫。這不是舉辦單位故意的，並將會盡可能減至最少。

1.5. Debris and Obstacles　碎片及障礙物
1.5.1 Debris may consist of speed bumps (made from a 10 mm plastic pipe or wooden dowel painted white) or wooden sticks less than 3 mm in diameter (e.g. cocktail sticks or kebab skewers). Robots may drive over or push aside debris as needed.
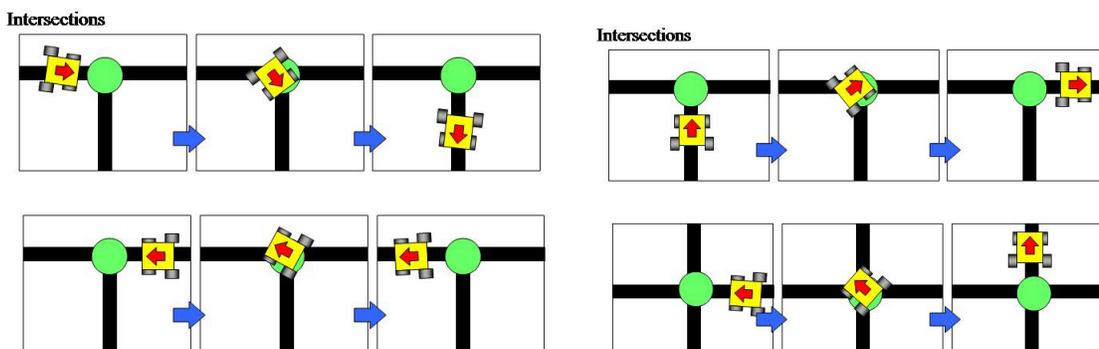碎片可能為減速坡(由10mm的膠管或木釘製、塗成白色)或直徑小於3mm的木棒(如雞尾酒攪棒或烤肉棒)。機械人可能越過碎片或把碎片推至一旁。

1.5.2 Debris may be attached to the walls.
碎片可能觸及牆。

1.5.3 Obstacles may consist of bricks, blocks, weights and other large, heavy items. Obstacles will NOT be located in hallways, nor on the ramp. Robots are expected to navigate around Obstacles. Obstacles that are moved / knocked over will remain where they fall and will be reset only once the robot has completed its scoring run.
障礙物可能為磚塊、積木、重物及其他大的、重的物品。障礙物不會放在走廊和斜坡。預期機械人是繞過障礙物。被移動/打翻的障礙物，將繼續倒下，只有機械人完成得分回合後才會重設。

1.6. Intersections　交叉路口

1.6.1 Intersection Markers are green circles with an approximate radius of 2 cm, positioned over an intersection. They indicate the correct path to follow.
交叉路口的標記為一個大約半徑 2 厘米的綠色圓，位於交叉路之上。它們指示可走的正確路徑。

1.6.2 At an intersection a robot should always choose the right-most path, it can either be to the right or straight forward.
於交叉路口，機械人應該總是選擇最右邊的路徑，它可以是轉右或直線前進。

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1.6.3 Intersection Markers is never placed in the first room.
交叉路口的標記不會放置在第一個房間。

1.6.4 The intersections is always perpendicular, but may have 3 or 4 branches.
交叉路口總是垂直相交,但可能有 3 或 4 個分支。

1.6.5 Note that the robot may need to go down the ramp if intersections are used.
注意:如交叉路口被使用,機械人也可能需要走落斜坡。

1.7. The Evacuation room　撤離房間
1.7.1 The black line ends at the entrance to the last room (the evacuation room), and robots are required to utilize some form of search strategy to locate a victim.
黑線於最後房間(撤離房間)的入口結束,機械人需要應用一些搜索策略來確定遇難者的位置。

1.7.2 At the entrance to the evacuation room, there is a 25 mm x 250 mm strip of reflective silver tape on the floor.
在撤離房間入口處的地板上將會有一條25mm x 250mm的反射銀帶。

1.7.3 For the primary competition, an Evacuation Point tile is placed at one corner of the evacuation room. The Evacuation Point tile is a right angled triangle with sides of 30 cm x 30 cm, and it is painted in black.
初級組比賽,"撤離點" 磚塊位於撤離房間的一個角落。"撤離點"為直角三角形,其邊為30cm x 30cm,黑色地板。

1.7.4 For the Secondary competition, the Evacuation Point tile is a right angled triangle, sides of 30 cm x 30 cm and elevated in 6 cm, and it is painted in black.
高級組比賽,"撤離點" 磚塊由一個直角三角形組成,其邊為30cm x 30cm,高6cm,塗上黑色。

1.7.5 The evacuation room have an entrance door only. The mission is considered complete once a robot achieves a "successful rescue of a victim". (Refer to 3.4.13)
撤離房間只會有入口。機械人完成"成功拯救遇難者"視之完成任務。(參見 3.4.13)

1.8. Victims　遇難者
1.8.1 A Victim may be located anywhere on the floor of the evacuation room, but will be at least 10 cm from the nearest wall, speed bumps or Obstacle.
遇難者可放於撤離房間任何地方,但與牆、速度坡或障礙相距最少10cm。

1.8.2 The victim takes the form of a soft drink can, internally weighted to approximately 150 grams. The dimensions of the can is similar to those readily available in the country in which the competition is being held (i.e. Australia 375 ml, US 12 fl oz, Europe 330 ml etc.). Teams need to be prepared for minor variations.
遇難者將採用汽水罐的形式,總重約150g。汽水罐尺寸以比賽承辦方當地的標準為準(如澳大利亞375ml,美國12fl oz,歐洲330ml)。參賽隊伍須作好準備以應付輕微的變化。

1.8.3 The victim is covered in aluminum foil.
遇難者將被鋁箔所包裹。

1.9. Environmental Conditions　環境條件
1.9.1. Teams must come prepared to adjust their robots to the lighting conditions at the venue.
隊伍必須有備而來,在會場的照明條件下調整他們的機械人。

1.9.2. Lighting and magnetic conditions may vary along the course in the rescue arena.
在拯救賽場上,照明及磁場情況可隨比賽過程有所變化。

1.9.3 The arena may be affected by magnetic fields (e.g. generated by under floor wiring and metallic objects).
場地可能受磁場影響(如:由地板下的電線和金屬物體產生的)。

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1.9.4 Teams should prepare their robots to handle expected lightning interference. While the organizers and referees will try their best to minimize external lighting interference, it is not possible for them to foresee all unexpected ones such as camera flash from spectators.
隊伍所準備的機械人應能應付預期的照明干擾。雖然舉辦單位和裁判將竭盡所能減少外在光線的干擾，但他們不可能預知所有意外的事，如來自觀眾相機的閃光燈。

2. Robot 機械人

2.1. Control 控制
2.1.1 Robots must be controlled autonomously (use of a remote control to manually control or pass information to the robot is not allowed).
機械人必須是自主控制(使用遙控器人作手控制或傳送資料給機械人是不允許)。

2.1.2 Robots must be started manually by the team captain.
機械人必須由隊長以人手啓動。

2.2. Construction 構造
2.2.1 Any robot kit or building blocks, either available on the market or built from raw hardware, may be used, as long as the design and construction are primarily and substantially the original work of the students (see section 2.5. below).
任何的機械人套裝或積木，不管是市場上銷售的，還是用原材料搭建而成的都可使用。只要設計和建構，在本質上主要來自學生原創(見以下部分2.5)。

2.2.2 Any commercially produced robot kits that are specifically marketed to complete major tasks of Rescue, such as 'line following' or 'rescue', will be disqualified. If there is any doubt, teams should consult the Technical Committee (TC) at the International RCJ Community Forum. "
任何商業生產的機械人套件，爲專門銷售作完成拯救的主要任務，如"軌跡跟蹤"或"拯救"的將有可能被取消資格。如有任何疑問，隊伍應在國際 RCJ 委員會論壇咨詢技術委員。

2.2.3 For the safety of participants and spectators, no lasers are allowed on any robot.
爲保參加者及觀眾安全，任何機械人都不允許使用雷射儀。

2.2.4 Bluetooth Class 2 and ZigBee communications are the only radio types allowed in RoboCupJunior. Robots that have other types of radio communications on board will either need to remove these or disable them as other types of radio communication can interfere with other leagues competing in RoboCup. If the robot has equipment for other forms of radio communication, they must prove that they have disabled them. Robots that do not comply may face immediate disqualification from the tournament.
RoboCupJunior中，只有藍芽組別2和ZigBee通訊是允許的。機械人電路板上有的其他類型的無線通訊時，應被移除或關掉。因其他類型的無線通訊可能干擾到RoboCup其他聯盟的賽事。如機械人已裝設了其他形式的無線通訊，隊伍必須證明它們已關掉。機械人沒有遵從，可能遭到立即取消比賽資格。

2.2.5 Pre-made sensors for line-following (line-leader) are not allowed. If you have any doubt about a specific sensor, please ask at the International RCJ Community Forum.
預製的傳感器作爲軌跡跟蹤是不允許的。如對特定的傳感器有任何疑問，隊伍應在國際RCJ委員會論壇咨詢技術委員。

2.3. Team 隊伍
2.3.1 The robot must perform its tasks 100% autonomously.
機械人必須100%全自主地執行任務

2.3.2 Each team must have only one robot in the field. (This rule can be modified in a Super Team Competition such that two or more robots are deployed together and have to cooperate in completing given tasks.)
每隊必須只有唯一的機械人在賽場內。(這規則在超級隊比賽中可被修改，如兩台或以上的機械人一同上陣和合作完成給予的任務。)

2.4. Inspection 檢查
2.4.1 The robots will be examined by a panel of referees before the start of the tournament and at other times during the competition to ensure that they meet the constraints described above.
比賽開始前和比賽過程中的其他時間，機械人將被一組裁判檢查，以確保機械人符合上述要求。

2.4.2 It is the responsibility of teams to have their robots re-inspected, if their robots are modified at any time during the tournament.
比賽期間任何時間機械人若有修改，參賽隊伍有負責讓機械人重新接受檢查。

2.4.3 Students will be asked to explain the operation of their robot in order to verify that the construction and programming of the robot are their own work.
學生將會被要求講解其機械人的操作，以證實機械人的構建和編程是由他們自己完成的。

2.4.4 Students will be asked questions about their preparation efforts, and may be requested to answer surveys and participate in video-taped interviews for research purposes.
學生將會被問及準備工作事宜，可能會被要求回答調查問卷及參與錄影訪問，作為研究目的。

2.5. Violations 違規
2.5.1. Any violations of the inspection rules will prevent that robot competing until modifications are effected.
違反檢查要求的機械人不得參賽；只有進行更改使其符合要求後才可參賽。

2.5.2. However, modifications must be made within the time schedule of the tournament and teams must not delay tournament play while making modifications.
然而，修改必須在比賽規定的時間內完成，進行修改的同時，隊伍不得耽誤比賽。

2.5.3. If a robot fails to meet all specifications (even with modification), it will be disqualified from that round (but not from the tournament).
若機械人不能符合所有的規定(即使已作修正)，將被取消其該輪比賽資格(但非整個比賽)。

2.5.4. If there is excessive mentor assistance or the work on the robots is not substantially original work by the students, then the team will be disqualified from the tournament.
如果教練過多協助，或者機械人的製作並非主要由學生完成，該隊伍將被取消參賽資格。

3. Play 比賽
3.1. Pre-round Practice 賽前練習
3.1.1. Where possible, competitors will have access to practice arenas for calibration, testing and tuning throughout the competition.
如果可以，整個比賽中，參賽者將進入練習場區進行校準、測試和調優。

3.1.2. Where there are dedicated 'competition' and 'practice' arena, it will be at the organizers discretion if testing is allowed on the competition fields.
如果有專門的 "比賽"及"練習" 賽場，將由舉辦單位自行決定是否允許在比賽場進行調試。

3.2. Humans 隊員
3.2.1. Teams should designate one human who will act as **captain** and be allowed to move the robot, based on the stated rules and as directed by the referee.
隊伍應委派一人作為隊長及僅隊長被允許可移動機械人，根據既定的規則和裁判作指示。

3.2.2. The captain can move robots only when told to do so by the referee.
只有當裁判作出要求時，隊長才可移動機械人。

3.2.3. Other team members (and any spectators) within the vicinity of the rescue arena are to stand at least 150 cm away from the arena while their robot is active, unless otherwise directed by the referee.
在機械人運動期間，該隊在賽場附近的其他隊員(任何觀眾)需要與場地保持最少150cm(約60寸)的距離，除非有裁判指示。

3.2.4 No one is allowed to touch the arenas intentionally during a scoring round.
得分回合期間，沒有人可故意觸摸賽場。

3.3. Start of play   開始比賽
3.3.1 The round begins at the scheduled starting time whether or not the team is present/ready. Start times will be posted prominently around the venue.
不管參賽隊伍是否準備完畢，每輪比賽將按照預先通知的開始。開始時間將張貼在賽場周圍的當眼位置。

3.3.2 Once the round has begun, Robots are not permitted to leave the competition area for any reason.
每輪比賽一旦開始，不論任何理由機械人不得離開比賽場區。

3.3.3 Robots will be given a maximum time of 8 minutes to calibrate their robot and complete the course. The time for each round will be kept by the referee.
參賽隊伍將有 8 分鐘時間進行調試和完成比賽。每一輪的時間將由裁判負責計時。

3.3.4 Calibration is defined as the taking of sensor readings (and modifying of the robot programming to accommodate such sensor readings) for the purposes of robot searching of the arena and identifying victims, and not for pre-mapping of the arena and/or victim location. Any and all pre-mapping activities will result in immediate disqualification of the robot for the round.
校準的定義是取得傳感器讀數(修改機械人程式以容納這些傳感器的讀數)，供機械人作賽場尋找和定義遇難者用途，不是作預先繪製賽場地圖和/或遇難者位置。任何及所有預先繪製地圖將會立即被除消該回合比賽資格。

3.3.5 Teams may calibrate their robot in as many locations as desired on the arena, but the clock will continue to count down. Robots are not permitted to move under power while calibrating and no points are scored while a team is calibrating.
隊伍可能於賽場內多個位置校準他們的機械人，但時鐘繼續倒數。當校準時不允許在場地上啓動機械人移動及隊伍校準時是不計分。

3.3.6 Once teams are ready to perform a scoring run, they must notify the referee. To begin a scoring run, the robot is placed on the starting tile in the first room as indicated by the referee. Once a scoring run has begun, no more calibration is permitted.
隊伍已就緒得分賽時，他們必須通知裁判。得分賽開始時，根據裁判指示機械人被放置在首間房間的起點方格上。得分賽開始後不再允許任何調試。

3.4. Scoring   計分
3.4.1 Robots are awarded points for successfully negotiating rooms, hallways, ramps and each hazard (gaps in the line, speed bump, intersections and obstacles).
機械人成功通過房間、走廊、斜坡及每個危險(斷線、減速坡、交叉路口和障礙物)可以得分。

3.4.2 Successfully negotiating is defined as entering through one doorway, completely following the line, negotiating all line gaps, intersections, speed bumps, obstacles, and exiting through a doorway without human interaction.
成功通過的定義是在沒有人爲干涉下，進入門口、完全跟隨軌跡、通過所有斷線、交叉路口、減速坡、障礙物和離開門口。

3.4.3 Failed attempts at negotiating elements of the arena are defined as "Lack of Progress" (see 3.5).
嘗試通過賽場內的元素失敗時，定義爲"進展中斷"(見3.5)

3.4.4 Points available for successfully negotiating rooms:
　　成功通過房間可得分數：
　　(1st Attempt) = 60 pts
　　(第1次嘗試) = 60分
　　(2nd Attempt) = 40 pts
　　(第2次嘗試) = 40分
　　(3rd Attempt)= 20 pts
　　(第3次嘗試) = 20分

3.4.5 Points available for successfully negotiating hallways and ramps:
　　成功通過走廊和斜坡可得分數：
　　(1st Attempt) = 30 pts
　　(第1次嘗試) = 30分
　　(2nd Attempt) = 20 pts
　　(第2次嘗試) = 20分
　　(3rd Attempt) = 10 pts
　　(第3次嘗試) = 10分

3.4.6 If intersections are used, the path may go to the opposite direction through a room/hallway/ramp (going back to the path that a robot already took). The points will be awarded as if it was a new room/hallway/ramp.
如使用交叉路口，路徑可能會向相反方向通過一個房間/走廊/斜坡(返回機械人已走過的路)。如這是新的房間/走廊/斜坡將獲得分。

3.4.7 There is no points available for negotiating rooms/hallways/ramps beyond the evacuation attempt in each direction (see 3.5.6).
若已超過通過房間/走廊/斜路的疏散嘗試是不會獲得分(見3.5.6)。

3.4.8 Points available for successfully negotiating each gap in the black line. 10 pts per gap
成功通過黑線上的每個斷線可獲10分。

3.4.9 Points available for successfully avoiding each obstacle blocking the black line. 10 pts per obstacle
成功通過黑線上的每個障礙物可獲10分。

3.4.10 Points available for successfully completing a tile that has speed bumps. 5 pts per speed bump tile
成功通過每個減速坡階磚塊可獲5分。

3.4.11 Points available for successfully completing a tile that has an intersection. 10 pts per direction through intersection tile
成功地完成有交叉路口的階磚塊可獲得分。每個方向通過交叉路口的階磚塊得10分。

3.4.12 Each gap, obstacle, speed bump and intersection tile can only be scored once per direction through the room, not each attempt through the room.
每個斷線、障礙物、減速坡和交叉路口階磚塊只會計分一次，是按照方向通過房間，而不是每次試圖通過房間。

3.4.13 Successful rescue of a victim: Robots are also awarded points for successfully rescuing victims. A successful victim rescue occurs when the victim is moved to the evacuation zone (it needs to be completely inside of the evacuation zone for Primary/free-standing for Secondary), in its original upright orientation, and no part of the robot is in contact with the victim (see figures below). Team captains may declare either a "Lack of Progress" or "End of Round" when a failed attempt at a victim rescue occurs (see 3.5).
成功拯救遇難者：機械人成功拯救遇難者可獲得分。成功的遇難者拯救是當遇難者被移至撤離區域(遇難者需要完全移入撤離區域(初級組)/直立的(高級組))，其原來直立的方向，機械人沒有觸碰遇難者(見下圖)。當嘗試拯救遇難者失敗時，隊長可宣告"進展中斷"或"結束回合"(見3.5)。

RoboCupJunior Rescue A Rules (2013)

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Points available for a successful rescue:
成功拯救可獲得分：

(1st Attempt) = 60 pts
(第1次嘗試) = 60分
(2nd Attempt) = 40 pts
(第2次嘗試) = 40分
(3rd Attempt)= 20 pts
(第3次嘗試) = 20分

*No points scored for rescue attempts beyond the third attempt.
拯救嘗試超出三次是不會獲得分。

3.4.14 Secondary Division Only - Additional Points for lifting the victim:
只限高級組 – 舉起遇難者之另外得分
(Lifted victim, with no part of the victim touching the floor) = 20 pts
(舉起遇難者，遇難者沒有任何部分接觸地板) =20分

3.4.15. Ties in scoring will be resolved on the basis of the time taken by each robot (or team of robots) to complete the course (this includes calibration time).
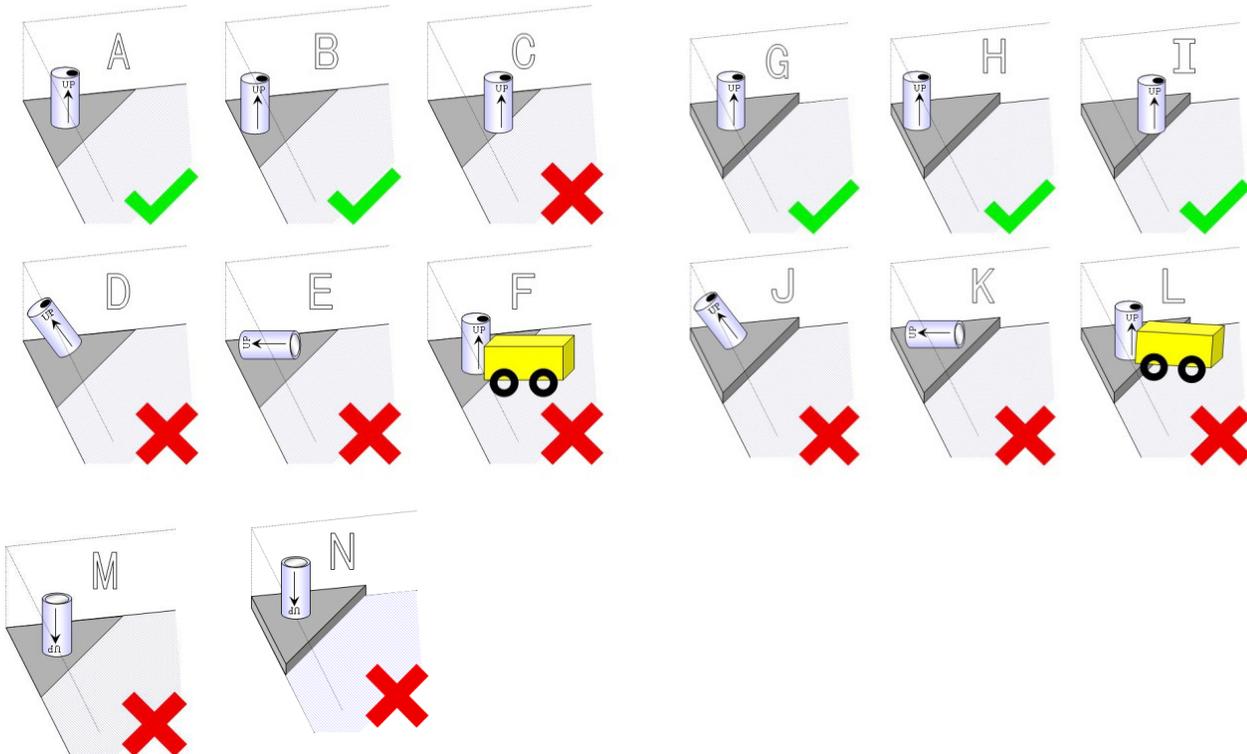如出現平分現象，將參考各個機械人(或隊伍的機械人)完成任務的時間分出優劣。這包括機械人校準時間。

3.4.16. Check RoboCupJunior official website for a score sheet template.
計分紙的模樣可於RoboCupJunior官方網頁找到。

Primary Rescue A - A,B,C,D,E,F　　初級組拯救A - A,B,C,D,E,F,M
Secondary Rescue A - G,H,I,J,K,L　　高級組拯救A - G,H,I,J,K,L,N

3.5. Lack of Progress   進展中斷

3.5.1 The robot must follow the black line where it is present. Failure to follow the line is considered Lack of Progress.

機械人必須跟循當前的黑線行走，未能跟循黑線行走會視爲進展中斷

3.5.2 Lack of Progress occurs if the robot is stuck in the same place or loses the black line without regaining it by the next tile in the sequence (see figures below).

如機械人卡住在同一處或走線時脫離黑線(軌跡)且難以在接著的階磚塊前找回軌跡，視爲發生進展中斷。

3.5.3 Lack of Progress occurs if the robot does not follow the correct path after an intersection tile.

機械人未能跟循正確路徑通過交叉路口階磚塊，視爲發生進展中斷。

3.5.4 The team captain can also call for a Lack of Progress at any time (s)he wants (for example if the robot is in danger).

如有需要，隊長可於任何時間要求進展中斷(如機械人處於危險)。

3.5.5. If Lack of Progress occurs the robot must restart the room/hallway/ramp where the Lack of Progress happens. The robot should be placed in the last tile of the former room and re-enter the room/hallway/ramp once again. Only the team captain is allowed to restart the robot without changing programs and/or modifying the robot.

如發生進展中斷，機械人必須在房間/走廊/斜坡重新開始。機械人被放到前一間房間的最後一個階磚塊，並再一次進入房間/走廊/斜坡。只有隊長可以重新開動機械人，且不能改變程式和/或修改機械人

3.5.6 If after the third attempt, the robot still fails to negotiate the room/hallway/ramp the team captain may choose to move the robot to the end of the room, hallway or ramp to continue on. The team captain may also choose to make further attempts at the failed room to earn the additional points available for overcoming obstacles, debris, gaps in the line, and speed bump points that have not already been earned in the previous attempts at the room.

如第三次嘗試後，機械人仍未能通過房間/走廊/斜坡，隊員可選擇將機械人放到房間/走廊/斜坡結束位置(最後一個階磚塊)繼續。隊長仍可選擇於失敗的房間繼續嘗試以獲另外的得分，如克服障礙物、碎片、斷線、減速坡的得分，這些是之前於該房間嘗試中未取的得分。

3.5.7 A team may elect to stop the round early at any time. In this case, the team captain must indicate to the referee the team's desire to terminate. The team will be awarded all points achieved up to the call for end of round. There is no Lack of Progress call for picking up the robot once end of round is called.

隊伍可於任何時間選擇停止。在此情況，隊長必須向裁判表示隊伍要求結束。隊伍將獲得在要求結束前所獲的分數。這不是進展中斷，當要求回合結束後，拿起機械人。

3.6 Victim Placement   遇難者擺放

3.6.1 Six different victim Placement Areas in the evacuation room, each approximately 30cm x 30cm in size, will be designated on the day of the competition.

比賽當天會將指定撤離區域的6個不同遇難者擺放區，每個擺放區大少爲30cm x 30cm。

3.6.2 The location of each area will be made known on the day of the competition but will not be marked on the field. No Placement Area will come within 100mm of a wall.

每個擺放區域會公佈但不會在場地上做記號，遇難者不會擺在靠近牆100mm之內。

3.6.3 Only 1 victim will be used in a round.

每輪比賽只有一個遇難者。

3.6.4 Once a robot begins its scoring round and has entered the Arena, the referee will roll a standard 6 sided dice to determine which Placement Area the victim will be located. The referee will place the victim randomly within the chosen 30cm x 30cm Placement Area.

一旦機械人開始得分賽及已進入賽場，裁判擲一枚六面骰以決定放置遇難者的擺放區。裁判將遇難者隨意放置在已選重的30cm x 30cm擺放區內。

RoboCupJunior Rescue A Rules (2013)

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3.6.5 If the victim is moved from its spot by a robot attempting a rescue, and the robot subsequently requires a restart, the victim will remain where it moved to. If it has been knocked over, it will remain knocked over.
如機械人搬動遇難者任務中,機械人其後需要重新開始,遇難者將保持在已搬動的位置,如遇難者已經打翻,將保持打翻。

3.6.6 If the robot is in contact with the victim and the team captain calls for a Lack of Progress, the referee may roll the dice once more and place the victim at a new location.
如機械人與遇難者有接觸,而隊長要求進展中斷,裁判可能再次擲骰子和將遇難者放到新的位置。

3.7 Evacuation Point Placement 撤離點安置
3.7.1 The Evacuation Point is placed in any of the non-entry corners in the evacuation room.
撤離點將放置在撤離房屋入口以外的任何一角落。

3.7.2 Once a robot begins its scoring round and has entered the Arena, the referee will roll a standard 6 sided dice to determine in which corner the Evacuation Point will be located.
當機械人開始分數回合和已進入賽場,裁判將投一粒標準的六面骰子來決定撤離點位於那一角落。

3.7.3 After a Lack of Progress happened in any room, the referee may roll the dice once more and place the Evacuation Zone at a new corner.
在房間任何一處發生進展中斷後,裁判可再次擲骰子,將撤離區放到新的角落。

3.7.4 The RCJ OC will try their best to secure the Evacuation Point down, but you should expect slight shift at times.
RCJ組織委員會將嘗試固定撤離點,但你應預期略有變化。

3.8 End of Play 比賽結束
3.8.1 The round ends when the time expires, the team captain calls at the end of round, or the successful rescue of victim (refer to 3.4.13).
回合結束,當時限而滿、隊伍要求結束回合、或成功完成遇難者拯救。

4. Conflict resolution 衝突的解決
4.1. Referee 裁判
4.1.1. During game play, the referee's decisions are final.
比賽期間,裁判享有最終裁定權。

4.2. Rule clarification 規則解釋
4.2.1. Rule clarification may be made by members of the International RoboCupJunior Rescue Technical Committee.
RCJ 國際拯救技術委員享有規則解釋權。

4.3. Special circumstances 特殊情況
4.3.1. Specific modifications to the rules for accommodating special circumstances, such as unforeseen problems and/or capabilities of a team's robot, may be agreed to at the time of the tournament, provided a majority of the contestants agree.
在大多數參賽隊伍同意的前提下,調節性的特殊情況,例如一些無法預料的問題和／或機械人的性能問題等,規則可作特殊修改。

4.3.2 If any of team captains/mentors do not show up to the teams meeting to discuss the problems and the modification to the rules, it is considered as an agreement.
如任何隊伍或教練沒有提出隊伍會議所討論的問題或規則的修改,視作達成協議。

RoboCupJunior Rescue A Rules (2013)
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5. Documentation   文件

5.1. Reporting   報告

5.1.1. Each team must bring an electronic presentation (e.g., in PowerPoint or Flash format) and a poster documenting the design, construction and programming of their robot. (For the details of the presentation contents, refer to 5.1.3.)
每隊需要帶備電子簡報(例如：PowerPoint 或 Flash格式)及海報描述機械人的設計、構造和程式。(簡報內容的詳情，參考5.1.3.)

5.1.2. Presentations and/or posters are to be shown to the judges during the scheduled interview session before being put up for viewing by the judges, other teams and the visiting members of the public.
將向評審員展示的簡報及/或海報，需於預定的訪問環節前提交，以讓評審員、其他隊伍及來賓鑒賞。

5.1.3. The presentation should provide information about the team and how they prepared for RoboCupJunior. Areas that could be covered include: 展示時需提供有關隊伍的資料及隊員為 RoboCupJunior 作準備的情況。需包括的地方有：
Team name; 隊伍名字；
Division (primary or secondary);
組別(小學或中學)；

Team members' names and (perhaps) a picture of the team members;
隊員姓名及（可能）隊員合照一張；

Team's country and city/town where the team members are from;
隊伍所屬國家及成員來自的城市；

Team's school and district;
隊伍所屬學校及地區；

Pictures of the robot prototypes;
機械人藍本的照片；

Information about the robot, including schematics, mechanical drawings and samples of code (programs);
有關機械人及隊伍的資料；包括概要、機械部分的構圖、程式例子；

Any interesting or unusual features of the robot;
機械人的任何有趣或特別之處；

What the team hopes to achieve in robotics.
隊伍希望從機械人學中得到甚麼。

5.1.4 Guidelines may be provided at the International RCJ Community Forum.
指引於國家RCJ委員會論壇提供。

5.1.5. Judges will review the presentation and discuss the contents with team members.
裁判將察看展示而且可能與隊伍成員進行交流。

5.1.6. Competitors are requested to provide digital versions of their presentation and poster.
參賽者需要提供數碼版本的描述及海報。

5.1.7. Prizes may be awarded to teams with outstanding presentations.
展示整體表現最傑出的隊伍將獲得獎項。

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P.13

5.2. Sharing 分享
5.2.1. Teams are encouraged to view one another's posters and presentations.
鼓勵各隊參觀其他參賽隊伍的海報及展示。

6. Code of Conduct 操行
6.1. Fair Play 公平比賽
6.1.1. Robots that cause deliberate or repeated damage to the arena will be disqualified.
機械人故意或重複損壞比賽場地的，取消其比賽資格。

6.1.2. Humans that cause deliberate interference with robots or damage to the arena will be disqualified.
人為地故意干擾其他機械人或是故意損壞比賽場地的，取消肇事者比賽資格。

6.1.3. It is expected that the aim of all teams is to participate fairly.
期望所有參賽隊伍的目標皆為公平的比賽。

6.2. Behavior 行為
6.2.1. Participants should be mindful of other people and their robots when moving around the tournament venue.
參加者應注意其他人及他們的機械人當在比賽場館活動時

6.2.2. Participants are not to enter setup areas of other leagues or other teams, unless expressly invited to do so by team members.
參賽者不可進入其他同盟或其他隊伍的設置區域，除非明確地得到其他隊伍成員的邀請。

6.2.3. Participants who misbehave may be asked to leave the building and risk being disqualified from the tournament.
行為不端的參賽隊員將被驅逐出場，還將可能被取消比賽資格。

6.2.4. These rules will be enforced at the discretion of the referees, officials, tournament organizers and local law enforcement authorities.
以上規則由裁判、工作人員、比賽舉辦單位和當地執法機構強制執行。

6.3. Mentors 教練
6.3.1. Mentors (teachers, parents, chaperones translators and other adult team members) are not allowed in the student work area.
教練(教師、父母、同伴、翻譯員和其他的成人成員)不允許駐足於學生工作區域。

6.3.2. The organizers will try to provide sufficient seating will be supplied for mentors to remain in a supervisory capacity around the student work area.
於學生工作區附近，大會將嘗試提供足夠座位給教練，以起監護作用。

6.3.3. Mentors are not permitted to repair robots or be involved in programming of their team's robots.
不允許教練修復機械人或是參與編寫程式。

6.3.4. Mentor interference with robots or referee decisions will result in a warning in the first instance. If this recurs, the team will risk being disqualified.
教練干擾機械人或裁判的決定，首犯給予警告處分，再犯則可取消該隊比賽資格。

6.4. Sharing 分享
6.4.1 The understanding that any technological and curricular developments should be shared among the RoboCup and RoboCupJunior participants after the tournament has been a part of world RoboCup competitions.
作為世界 RoboCup 比賽的一部分，大家已達成共識，即賽後參賽者共享技術進步和課程開展情況。

6.4.2. Any developments may be published on the RoboCupJunior website after the event.
所有的進展情況賽後均可公佈於 RoboCup Junior 的網站上。

6.4.3. This furthers the mission of RoboCupJunior as an educational initiative.
提倡分享的做法進一步加強了 RoboCup Junior 作爲一項具有教育意義的公開化活動。

6.5. Spirit   精神
6.5.1. It is expected that all participants (students and mentors alike) will respect the RoboCupJunior mission.
期望所有的參與者、學生和教練能尊重 RoboCupJunior 的宗旨。

6.5.2. The referees and officials will act within the spirit of the event.
裁判和工作人員的行爲應遵守活動精神。

6.5.3. It is not whether you win or lose, but how much you learn that counts!
比賽意義不在輸贏，重在學習！

Note: The English version of these rules shall prevail wherever there is a discrepancy between the English and the Chinese versions.
注意：本賽規的中英文本如有歧義，概以英文本爲準。