

WorldSkills UK 2013
Pre-Selection Task
Mobile Robotics Descriptions

Task 1

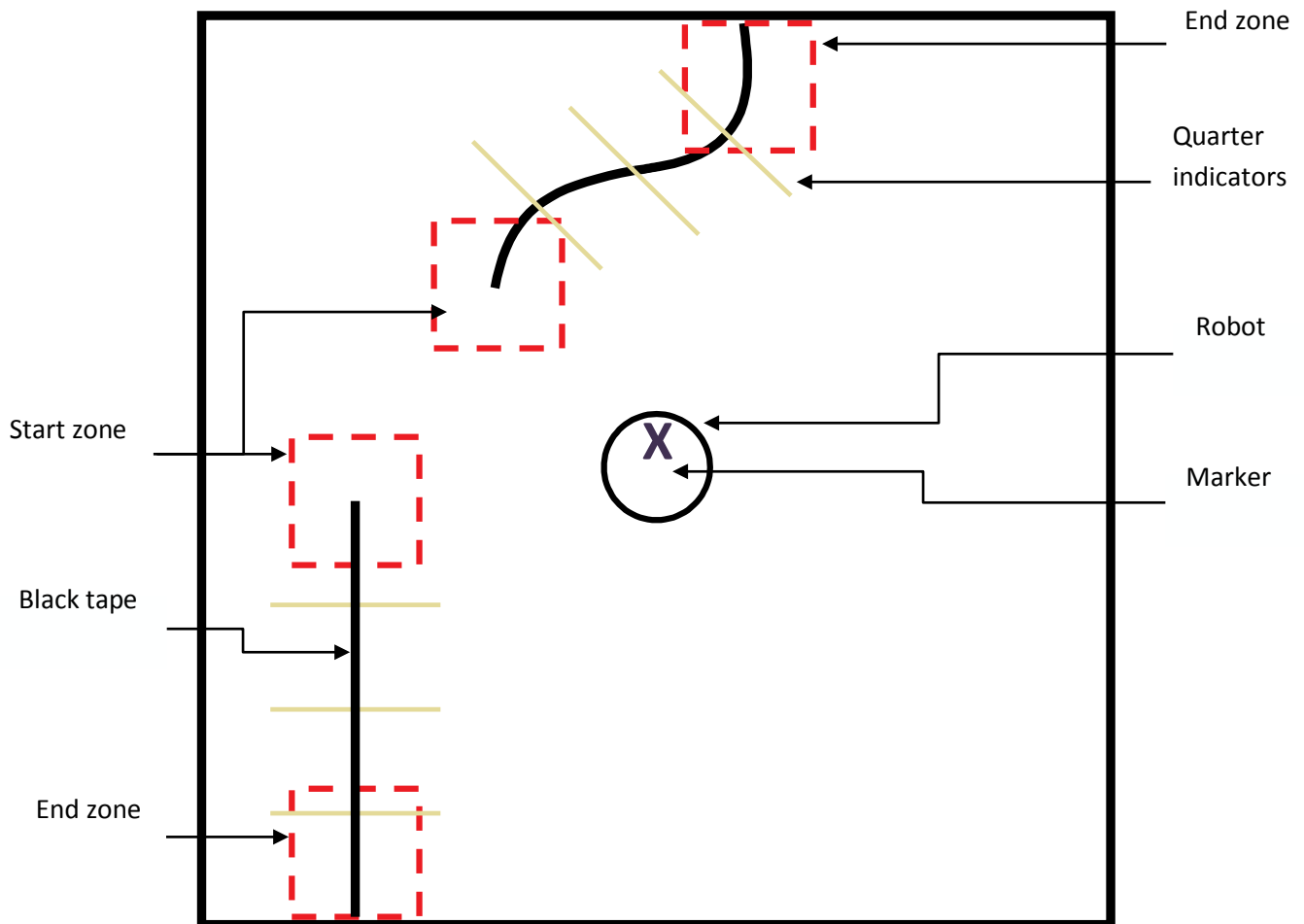


Figure 1: Diagram of competition arena

General Information:

- The competition arena is 3000mm x 3000mm with a 150mm high wall
- There is straight black tape and a curved black tape on the table

Task description:

The main goal is to follow the black tape using the optic sensors

Task 1 A- Straight black tape

The Robotino will be placed by the team on a marker as shown in figure 1. The robot must completely cover the marker. The robot must move towards the start zone which is indicated in figure 1 and then follow the straight black tape till the end. At the end of the tape the robot must stop within the end zone.

There will be two runs. Run 1 will used to demonstrate the ability to complete the task with no time element. In Run 2 the fastest team will receive two bonus points and the second fastest team will receive one bonus point. Bonus points will only be awarded on full completion of the task.

Scoring:

Run 1

Maximum 2.75 Marks

- 0.25 points for reaching the start zone *
- 0.5 points for travelling past the quarter point marker *
- 0.5 points for travelling past the half way point marker *
- 0.5 points for travelling past the three quarters point marker *
- 1 point for being completely inside the end zone

Scoring:

Run 2

Maximum 4.75 Marks

- 0.25 points for reaching the start zone *
- 0.5 points for travelling past the quarter point marker *
- 0.5 points for travelling past the half way point marker *
- 0.5 points for travelling past the three quarters point marker *
- 1 point for being completely inside the end zone
- 2 points to the fastest team overall, 1 point to the second fastest team

Task 1 B- Curved black tape

The Robotino will be placed by the team on a marker as shown in figure 1. The robot must completely cover the marker. The robot must move towards the start zone which is indicated in figure 1 and then follow the curved black tape till the end. At the end of the tape the robot must stop within the end zone.

There will be two runs. Run 1 will used to demonstrate the ability to complete the task with no time element. In Run 2 the fastest team will receive two bonus points and the second fastest team will receive one bonus point. Bonus points will only be awarded on full completion of the task.

Scoring:**Run 1****Maximum 2.75 Marks**

- 0.25 points for reaching the start zone *
- 0.5 points for travelling past the quarter point marker *
- 0.5 points for travelling past the half way point marker *
- 0.5 points for travelling past the three quarters point marker *
- 1 point for being completely inside the end zone

Scoring:**Run 2****Maximum 4.75 Marks**

- 0.25 points for reaching the start zone *
- 0.5 points for travelling past the quarter point marker *
- 0.5 points for travelling past the half way point marker *
- 0.5 points for travelling past the three quarters point marker *
- 1 point for being completely inside the end zone
- 2 points to the fastest team overall, 1 point to the second fastest team

Total: 15 Marks Max, 0 Marks Min

*** The robot must be more than 50% across the marker to get the relevant points**

False Starts

- 1) The Start of a Run Procedure will be: A UKSkills Judge saying 3, 2, 1, Go.
- 2) A False Start occurs when a Competitor **Clicks on the Green Button** and starts their system before the UKSkills Judge says 'Go'
- 3) Teams will be warned if they False Start once.
- 4) Teams will be disqualified from a Task Run if they False Start a second time during the same Task run.
- 5) Teams disqualified in their First Task Run will be allowed to participate in their Second Task Run.