
PREMIER RESCUE

ANALYSIS

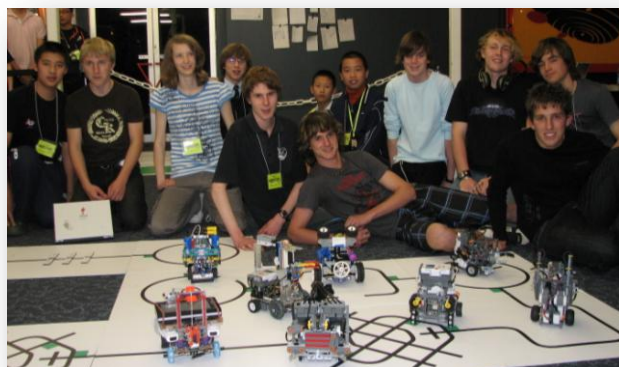
Premier Rescue

PREMIER RESCUE - ANALYSIS

In order to complete the Australian RoboCup Premier Rescue, one must first break down what is required into a number of fundamental processes. The specific Premier Rescue requirements are indicated by the **(PR)** while the Rescue requirements use the **(R)**.

1. **Following a line (R)**
 - a. RoboCup Premier Rescue requires the robot to follow a line that is both straight and curved. The robot must be able to negotiate the curves without losing the line or the robot will need to restart the course.
2. **Turn at intersections indicated by the green square (R)**
 - a. The Premier Rescue course has a number of intersections that are marked with a green square which indicates the direction the robot is to turn.
3. **Detect and navigate around the Water Tower (PR)**
 - a. The Premier Rescue includes a 1.25 litre pet bottle filled with water. This obstacle must be detected and navigated around without intentionally moving the tower.
4. **Travers the Speed Humps (R)**
 - a. The speed humps add a degree of difficulty to line following as the robot can get bounced around and loose the line. Robots must be designed to meet this challenge.
5. **Navigate through Gridlock (PR)**
 - a. The gridlock tile is the most difficult of all. Your robot needs to be able to detect the green square intersections but not get confused by the other intersections.
6. **Know when the Chemical spill is reached (R)**
 - a. When the robot reaches the chemical spill, the robot needs to be able to detect the silver foil strip which indicates the entrance to the chemical spill.
7. **Find the Victim (R)**
 - a. Upon entering the chemical spill the robot needs to find the victim.
8. **Pick up the victim (PR) and place it on the rescue platform (PR)**
 - a. Your robot must be able to demonstrate an ability to pick up the victim. This mechanism needs to lift the victim at least 70mm off the tile. The robot now needs to find the rescue platform and place and release the victim on it in an upright position.

As can be seen by the additional 4 requirements of the Premier Rescue, a more complex robot and programming are required. The Premier Rescue robot is limited to 28cm diameter and 28cm height. Measurements are taken when the robot is fully extended.



Premier Rescue

PREMIER RESCUE – ANALYSIS (CONT...)

THE ROBOCUP PREMIER RESCUE FIELD

The rescue field is designed for both the RoboCup Rescue and the RoboCup Premier Rescue. If you use the mat below without cutting it up into the individual tiles, Premier Rescue robots can start from the beginning of the Hill tile and continue for the full length of the field. This will be more tiles than the 12 max for a competition course. However, it allows you to test your robot with all tiles and challengers.

