

RoboCup JapanOpen 2014 Standard Platform League Technical Challenge Rule Book

SPL Section Committee of RoboCup JapanOpen 2014

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For RoboCup JapanOpen 2014, the SPL section committee organizes the technical challenge competition with one challenge explained in this rule book. The SPL section committee encourages JapanOpen committee to prize the champion of this challenge at the awards ceremony of JapanOpen 2014.

In this book, two kinds of challenge are written. The first one: *Goal Challenge for Expert* is used for the competition. The second one: *Goal Challenge for Beginner* is prepared for an event that is planned on JapanOpen 2014.

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1 Goal Challenge for Expert

This challenge is designed to evaluate the fundamental ability of a field player as an autonomous robot. In this challenge, the following trial is examined within a fixed time limit. Dimensional data of the soccer field used for this challenge is based on the rule book for RoboCup 2014.

1.1 Trial

The ball is put on one of the penalty marks on the field, which is shown in Fig. 1. The robot starts from the penalty area near the penalty mark on which the ball is placed. At the start pose, the robot should not touch anything outside of the penalty area. The lines around the penalty area are included in the penalty area.

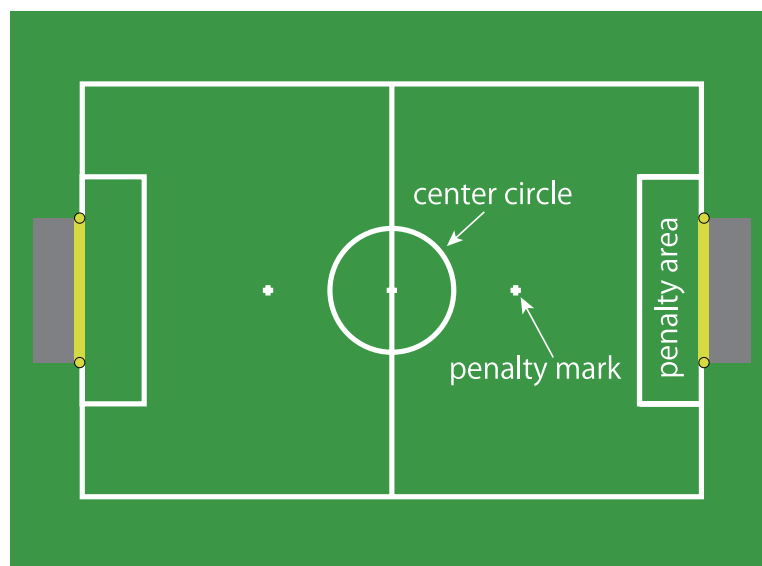


Figure 1: Soccer field

The first sub task of the robot is to reach the center circle. When a foot of the robot touches or strides across the circle line of the center line, 1 **point** is given to the robot. In this sub task, the robot should not touch the ball. The trial is stopped and no point is given to the robot.

The next sub task of the robot is to touch the ball. When the robot touches the ball, **another point** is given.

The final sub task is to get a goal. From the first touch of the ball to a goal, the robot can touch the ball more than once. When the robot makes a goal, **one goal** is given.

1.2 Number of Trials

Each team can try several trials within a time limit, which should be fixed by participants before the challenge. Team members can restart a trial anytime they want. Points obtained in the disrupted trial are valid.

When the ball is moving at the finish time, the trial is extended until the ball stops or the robot touches the ball.

1.3 Ranking

The team which scored more goals than any other team is the winner of the challenge. The rank of each team is also given in the order of the number of goals.

If more than one teams scored the same number of goals, the total points obtained in the challenge are compared. The team which obtained the largest number of points is selected.

When the total points of some teams that are compared are identical, the elapsed time at the first touch to the ball by the robot in the time limit (not in a trial) is evaluated. The team that gets the shortest time is the winner. For this judgment, the referee must record the elapsed time.

If any compared team cannot touch the ball in the time limit, the elapsed time at the first touch to the center circle in the time limit is used for choosing the winner. For this judgment, the referee must record the elapsed time.

If the robot of a team cannot touch the center circle in the time limit, the team is not ranked. If no team is ranked, we do not choose the winner of the challenge.

2 Goal Challenge for Beginner

In the trials for beginners, the robot start in the goal area. Other rules conform to that of the expert challenge. 1 point is given only when the robot touches the ball. When the robot has scored, 1 goal is counted.