2024 Line SuperTeam Rules

RoboCupJunior Rescue Committee

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Scenario

A disastrous flood has hit a beach and cut it off from vehicle access. Victims need to be evacuated from the beach before another flood strikes, requiring a complex rescue operation. A breakdown of local communication infrastructure necessitates locating the nearest operational disaster response facility.

Two autonomous robots are deployed to collaborate on this task. Robot A starts on the dam, has to retrieve the information of the closest operational disaster response facility and deploy a ramp towards the beach. Robot B is airdropped at the beach to locate and evacuate the victim. The robots have to communicate to allow Robot B to successfully deliver the victim to the correct treatment facility.
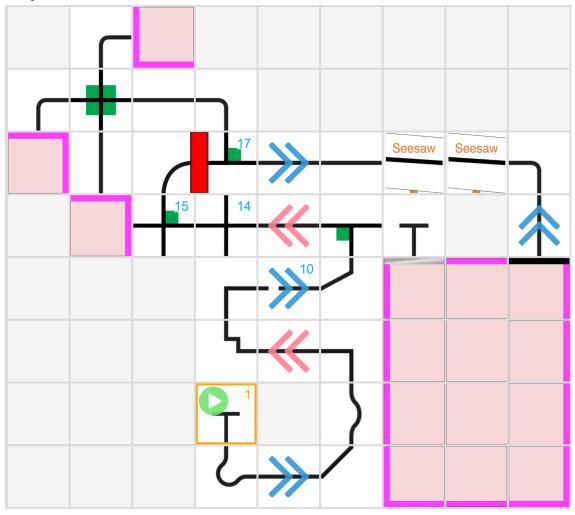
Field

Sample field:

- The layout of the Line section will change from the one shown above, but exactly one intersection will be present until the red line.
  - There are two paths available, one more challenging path over the dam and a shorter back road.
- Robot A starts on the start tile in the Line section of the field. It is up to the team to decide which robot will be Robot A.
- Robot A has to follow the line and detect which direction the intersection is pointing (left, straight ahead, right)
- After crossing the red line, Robot A needs to push the long ramp to make it fall down to the beach, allowing Robot B to deliver the victim.

- At the same time as Robot A begins line following, Robot B starts in front of the evacuation zone and has to find one live victim. There will only be one victim in the evacuation zone.
- Robot B has to climb the ramp which was pushed by Robot A. Upon reaching a dead end, it has to select the way communicated by Robot A and deliver the victim to the correct evacuation point as communicated by Robot A.
- The communication may happen on either side of the ramp or wirelessly.

Gameplay

Game Start

Both team captains must press the start button on each robot at the same time.

Game End

The game ends when:
a. The 8 minutes of allowed game time expires.
b. Both team captains call the end of the game.
c. Robot B delivers the victim to an evacuation point.

Lack of Progress

A lack of progress occurs when:
a. One team captain declares a lack of progress.
b. A robot damages the field.
c. A team member touches the field or their robot.
d. The robot does not follow the line like in the normal rules.

In the event of a lack of progress, the two robots will return to their respective start tile and again both captains will have to press the start button at the same time. The direction of the intersection in the line following part may be changed during a lack of progress. The Victim will be placed randomly in the evacuation zone.

Scoring

- Line following:
  - Flat score for completing the easy line: 50 p
  - Flat score for completing the harder line: 100 p
  - 1st Intersection correctly navigated 10 p
- Bridge deployed 50 p

- Victim in control of Robot B 50 p (lifted up)
- Robot B crosses bridge 50 p
- Victim correctly delivered 200 p
- Exit bonus: awarded if victim successfully delivered: 100 p - 10 x #LoP min 0 p

Ranking

The ranking of the teams will be determined as follows:
1. Highest overall score.
2. In ascending order of Game Time.
3. In ascending order of the number LoPs.