ROBOTAC 2024

Mission 1, Quick Win Challenge

1. Highlight

(1) In this mission, autonomous/bionic robots complete the task of ore acquisition and transportation on the upland. The manual robots pick up ores from the autonomous/bionic robots and put them into the furnace.

Each game is two minutes long, and each team plays two games. The best outcome of the two games will be used.

(2) Scoring:

ROBOT	MISSION	SCORING
Autonomous/bionic robot	Start and fully exit the starting zone.	5 points, 5 points possible
	Obtain blue ores from the mine.	15 points, 15 points possible
	Place an ore on the transfer platform	10 points for each ore, 20 points possible
Manual robot	Obtained an ore.	10 points for each ore, 40 points possible
	Put an ore into the furnace	10 points for each ore, 40 points possible

Time used: from game starts to game ends.

If the mission is accomplished, the game ends when the robots stop moving.

If the mission is not accomplished, the game ends when the robots stop moving, and an operator requests an end to the game.

Game outcome: The game outcome is ranked from high to low points.

When teams have same points, the team that uses less time ranks higher.

When teams have same points, and use same time, the team with less robot weight ranks higher.

2. Game field and props

Game field include **uplands**, an **ore zone**, and a **canyon zone**. Details of the game field are illustrated in Fig. 1in the Appendix. Details of game field and props please refer to ROBOTAC 2024 Game Rules.

3. Robot

Each team can have one automatic/biomimetic robot and one manual robot to participate in this game. Detailed requirements on the robots can be found in the ROBOTAC 2024 Game Rules (See also Chapter 4).

4. Team

(1) a. Undergraduate, vocational colleges, high schools, and vocational schools in China are allowed to form teams to participate in the competition. The proportion of international students among the team members should not be less than 60%, and cross school teams are allowed;

b. Overseas universities can form teams to participate in the competition, and cross school teams are allowed.

c. Each team can have one international graduate student.

(2) Each team can have up to 12 members and 3 faculty advisors. Up to 3 team members can participate in a game.

(3) Operators must stay in the operator zone during the game.

5. Game

(1) Prior to start, each team has one minute to prepare their robots in respective start zones. The robots may be powered on. Manual robots are not allowed out of the start zone. Automatic/biomimetic robots can carry one ore when starting.

(2) The referee system starts the by whistle, and robots start from their respective start zones. Robot start must be completed within 10 seconds after the match starts. Start before the whistle is prohibited. A second false start in the game will result in disqualification

(3) When a robot moves out of the game field border, the team will be ruled to lose the game. The score is recorded as zero points.

(4) Retry is prohibited after the game starts. If a robot malfunctions or loses control, it is disqualified. For safety, the referee can order the power off and removal of a robot from the game field.

(5) Please refer to ROBOTAC 2024 Game Rules for additional information.。

6. Others

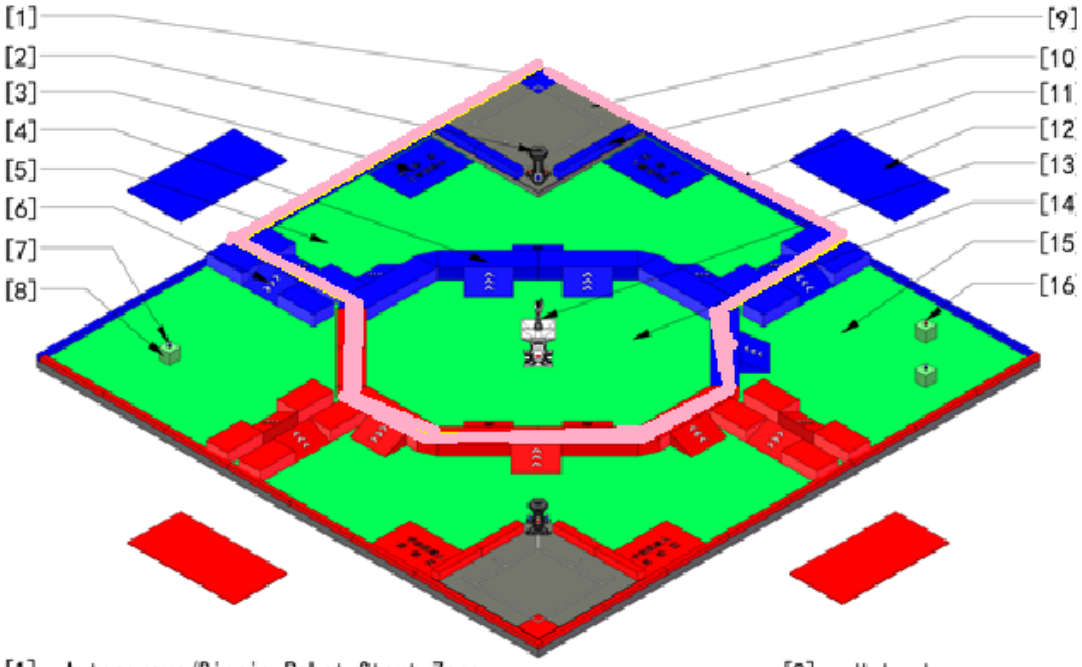
(1) Referees have the right to make rulings for any action not specified in the rules. In case of a dispute, the decision of the chief referee is final.

(2) Please check the official website http://www.robotac.cn for latest version of game rules.

(3) FAQs are available at http://ask.robotac.cn(You need to obtain the login account from the organizing committee)

(4) The organizing committee reserves the right for final explanation to the rules.

Appendix



[1] Autonomous/Bionic Robot Start Zone
[2] Mine and Rehab Zone
[3] Manual Robot Start Zone
[4] Crater
[5] Defense Zone
[6] Slope
[7] Gold Ore
[8] Lift
[9] Upland
[10] Transfer Platform
[11] Fence
[12] Operation Zone
[13] Furnace
[14] Canyon
[15] Ore Zone
[16] Ore

Fig 1 Game field