Rules of the Robot Competition

Remote Control SUMO ROBOT

Category 1: Division/Competitors

Rule 1

1.1 Each robot team can have only one member.

1.2 There are two divisions in the competition:

1.2.1 Junior and BASIC Division: For competitors aged 10 to 14, born between 2010 and 2014.

1.2.2 Senior Division: For competitors aged 15 to 19, born between 2005 and 2009.

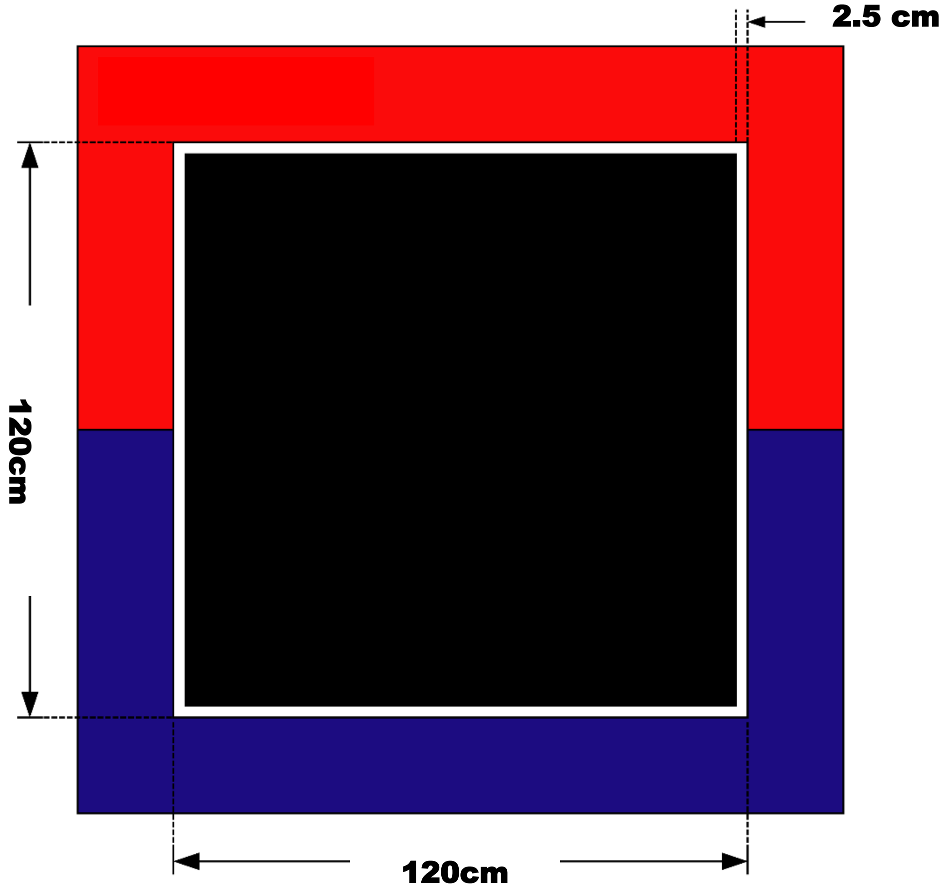
1.3 Each team may or may not have a teacher/advisor/team supervisor. If present, there can be only one, and they can oversee multiple teams simultaneously.

Category 2: Competition Field Format

Rule 2: Definition of the Field

The competition field includes the Sumo Arena, the area within the arena, and the surrounding area.

Rule 3: Field Specifications



Rule 3: Field Specifications

3.1 The competition field is a square with a size not exceeding 120 x 120 centimeters and a height of approximately 2.5 centimeters.

3.2 The field has a white border strip that is 2.5 centimeters wide, which must be inside the field. The inside of the field is matte black, smooth, and hard. The color used must not reflect infrared or ultraviolet rays, including Durabite ink.

Rule 4: Area Surrounding the Field

The area surrounding the field can be any color except white and can have any shape.

Category 3: Robot Specifications

Rule 5: Technical Specifications

5.1 The size of the robot must not exceed 25 x 25 centimeters with no height limit and must fit into a 25 x 25 centimeter box provided by the judges before the competition.

5.2 The control board, number of motors, external motor driver circuits, and sensors must comply with the specifications in Table 1, summarized as follows:

5.2.1 Junior Division: Uses a control board from INEX, can have up to 2 drive motors, and uses external motor driver circuits and the number of sensors as specified in category B1 in Table 1.

5.2.3 Senior Division: Uses a control board from INEX, can have an unlimited number and type of drive motors, and uses external motor driver circuits and the number of sensors as specified in category C1 in Table 1.

5.3 The type or form of communication between the robot and the remote control is not restricted, as long as it is wireless.

5.4 The number and type of robot wheels are not restricted, but they must not adhere to or stick to the field when not in operation. Wheels must not be coated with oil or lubricating fluids.

5.5 Robots can separate or expand in size during the competition, but must not shoot, throw, or send any parts or equipment out of the robot during the match, or they will be immediately disqualified from that match.

5.6 All screws, nuts, and fastening devices on the robot must be securely fixed. If any parts fall off, break, or detach during the competition, the referee will remove them and allow the match to continue. The referee will not be responsible for any consequences that occur while removing fallen parts from the field.

5.7 The total weight of the robot must not exceed:

- 1.5 kilograms (1,500 grams), excluding download signal cables, for the Junior Division.

- 3 kilograms (3,000 grams), excluding download signal cables, for the Senior Division.

5.8 There are no restrictions on the specifications of the computer used for programming the robot's control system.

Section 6: Prohibited Actions in Robot Construction

6.1 Do not use parts or any other equipment that, once installed, will damage the field. This includes the use of wheels coated with oil or lubricants.

6.3 Do not install or use equipment containing liquids, powders, or dust, including air, that can be expelled towards the opponent's robot.

6.4 Do not use any equipment that, under normal operation, produces flames or combustion.

6.5 Do not use any equipment that can shoot, throw, or launch parts from the robot towards the opponent.

6.6 Do not install or use any equipment or tools that can anchor the robot to the field or the sumo ring, including adhesives, sticky surfaces, tape, stickers, or special equipment used to support or create resistance against the field, such as jet systems.

6.7 In the Junior category, it is strictly prohibited to use or install blades or similar equipment in robot construction. Violation of this rule will result in disqualification.

Section 4: Competition Format

7.1 Each match consists of 3 rounds, each lasting 1 minute.

7.2 The winner of the match is the team that scores the most points in 3 rounds. For example, winning 2 out of 3 rounds. Each round won earns 1 yuko. If no team scores before time runs out, the round is considered a draw. If after 3 rounds no team has scored 2 yukos, the referee will decide as follows:

- **7.2.1** If both teams have 1 yuko each (winning one round each) and one round is drawn, the team with the lighter weight wins.
- **7.2.2** If all 3 rounds are drawn, the team with the lighter weight wins.
- **7.2.3** If 2 rounds are drawn and one team wins the remaining round, that team is the winner.
- **7.2.4** If no team has won or scored 2 yukos after 2 rounds, a third round must be played. For example, if Team A wins the first round and the second round is drawn, a third round must be played. If Team B wins the third round, the decision is made by weighing the robots, with the lighter one winning, except in the final round, where an extra round is played.

7.3 In the event of overtime for the final round, the team that scores a yuko first wins. However, all decisions are subject to the referee, who may determine overtime or decide by robot weight.

7.4 The competition system is as follows:

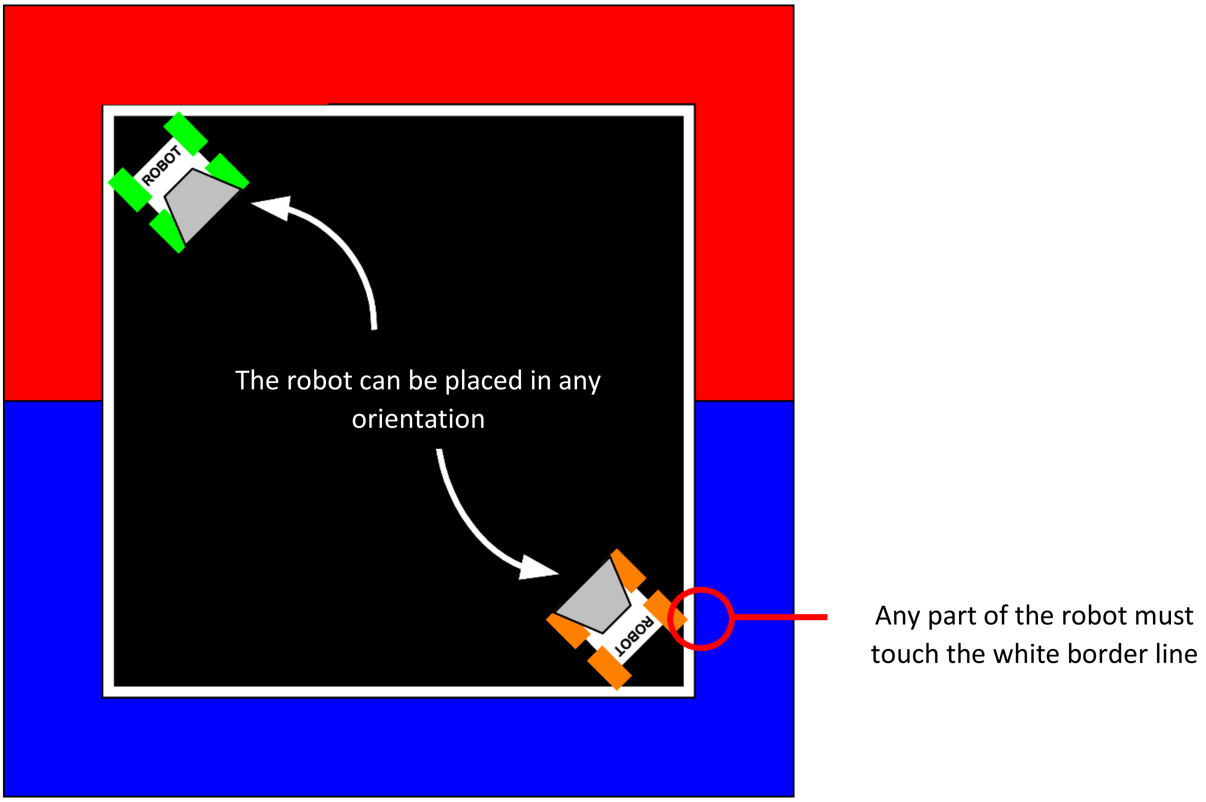
- **7.4.1** The first round is divided into groups, each with no more than 6 teams. The top 2 teams from each group advance to the second round.
- **7.4.2** From the second round to the final, teams compete in pairs, with the winner advancing to the next round, continuing until the champion, first runner-up, second runner-up, and third runner-up are determined.

Section 5: Starting, Stopping, Resuming, and Ending the Competition

8. Starting the Competition

8.1 When the referee gives the signal, all competitors must be ready at the field.

8.2 Competitors will draw lots to choose between the red or blue side.



8.3 The team that chooses the side will place their robot first. They must place their robot on the field at the corner corresponding to the chosen side from Section 8.2. The robot can be oriented in any direction, but part of the robot must be touching the white line at the edge of the field. After that, the opposing team will place their robot accordingly.

8.4 When the referee gives the signal, competitors can immediately move their robots, but no competitor should be inside the ring area before this.

8.5 From the second round onward, the team that won the previous round will place their robot on the field first, facing any direction towards the opponent. Then the team that lost the previous round will place their robot.

8.6 Competitors must ensure their robots move continuously and show efforts to engage the opponent.

- **8.6.1** The referee will warn competitors if there is no attempt to engage and compete.
- **8.6.2** If the situation in 8.6.1 occurs again after a warning, the referee may end the match and declare both teams as losers with 0 points for the first round.
- **8.6.3** If the situation in 8.6.2 occurs in the second round, quarterfinals, or semifinals, both teams will be eliminated.
- **8.6.4** If the situation in 8.6.2 occurs in the final, both teams will be declared joint first runners-up, with no champion.

9. Stopping and Restarting

The competition will only be stopped and restarted upon the referee's announcement.

10. Ending the Competition

The competition officially ends when the head referee announces it, and competitors must remove their robots from the field.

Section 6: Competition Timing

11. Match Duration

Each round lasts for 1 minute, starting and ending as announced by the head referee.

12. Overtime

Overtime is set for 1 minute or as determined by the referee and will only be used in the final match.

13. Time Exclusions

The following events are not included in the match time:

13.1 Time taken by the head referee to announce yuko points.

13.2 Time before the start of a new round after the head referee announces yuko points.

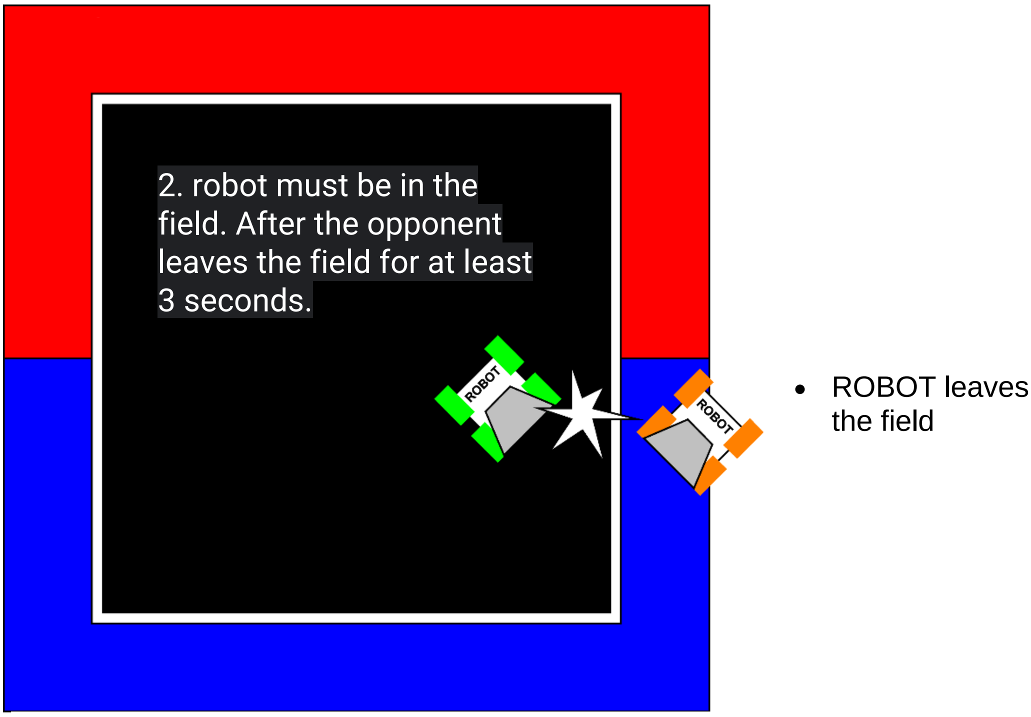
13.3 Time taken by the head referee to announce a stop in the match.

Section 7: Yuko Points

14. Yuko Points

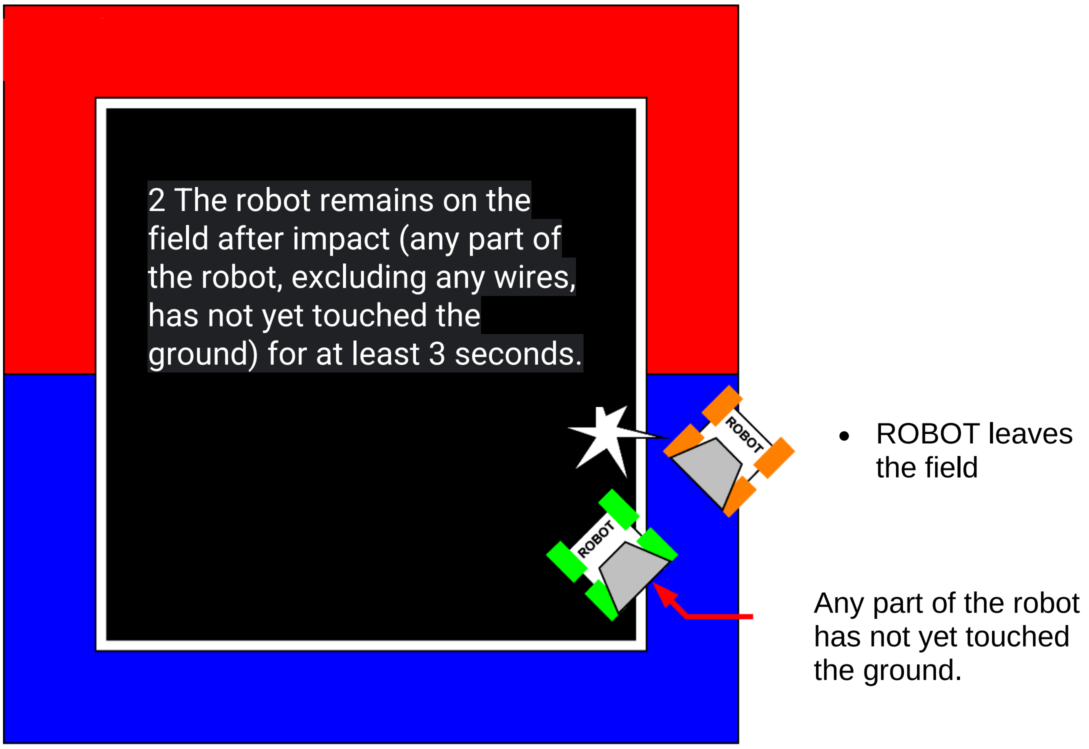
14.1 A score of 1 yuko is awarded when:

14.1.1 One side is able to make any part of the opponent's robot touch the ground outside the sumo ring, which is the area next to the field, and remains in the field for at least 3 seconds thereafter. The side that accomplishes this will receive 1 yuko point.



Achieving 1 EUCO point occurs when two events occur on the playing field.

14.1.2 Any part of the opponent's robot touches the ground outside the sumo ring, and the opponent's robot remains in the field for at least 3 seconds thereafter. The side that accomplishes this will receive 1 yuko point.



In this case: The referee awards the robot that is still on the field a score of 1 uCo.

14.1.3 If one side's robot is non-operational for 5 seconds, the referee will declare a knockout, and the other side will win that round.

14.2 If the robot is still on the edge of the field, no points are awarded, and the competition continues.

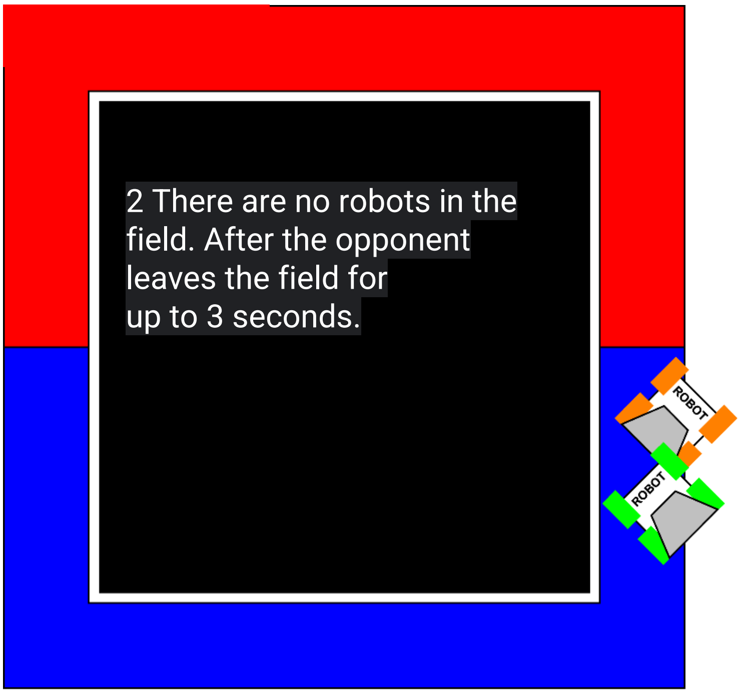
14.3 The match will be stopped when:

14.3.1 Both robots are stuck together and there is no movement for 5 seconds.

14.3.2 Both robots move repetitively, such as moving back and forth, spinning continuously, or moving in a circle for 5 seconds, including if they are completely still. This is considered a lack of progress in movement. However, the referee can extend this period to 30 seconds.

14.3.3 If one side experiences the situation described in 14.3.2, the other side will receive 1 yuko point. However, the referee can extend this period to 30 seconds.

14.3.4 If both robots touch the ground outside the sumo ring, the round is considered a draw.



- Robot leaves the field Both of them at approximately the same time.

In this case, the referee will decide that it is a tie (DRAW).

Section 8: Rule Violations

15. Competitors will be considered to have violated the rules if they breach any of the provisions in Sections 6, 16, and 17.

16. Competitors who insult or demean the opponent, either verbally or through actions, or have their robot make sounds, display messages, or exhibit behaviors that insult or demean the opponent will be disqualified.

17. Competitors will also be considered in violation if they:

17.1 Enter the ring area during the competition unless the referee announces a yuko point or during a competition stop.

17.2 Throw or bring any parts or equipment into the ring area.

17.3 Perform any actions that unnecessarily halt the competition.

17.4 Take more than 30 seconds to restart the competition unless permitted by the referee.

17.5 Engage in any behavior that is impolite and brings the competition into disrepute.

Section 9: Penalties

18. Violations of Sections 6 and 16 will result in immediate disqualification and the opponent will be awarded 2 yuko points.

19. For violations of Section 17, the referee will award 1 yuko point to the opponent.

Section 10: Damage and Accidents in the Competition

20. Requesting a Pause

Competitors can request a pause in the competition if their robot experiences an accident that prevents it from continuing.

21. Inability to Continue

If an accident occurs and a robot cannot continue, the referee will determine which team caused the accident. The team causing the accident will lose. If it cannot be determined, the team that cannot continue will lose.

22. Time for Accident Consideration

This is up to the committee but must not exceed 5 minutes.

23. Awarding Yuko Points to Teams Unable to Continue

If an accident occurs and the team that did not cause it cannot continue, they will be awarded 2 yuko points and win the match. If they already have 1 yuko, they will receive 1 additional yuko to secure the win.

Section 11: Identification of Robots

24. The name or number of the robot must be clearly and easily visible on the robot body at all times during the competition.