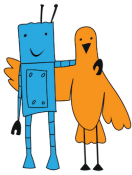


## «SUMO» CONTEST RULES «HUMANOID ROBOTS SUMO» CATEGORY

*Version **2.1** dated October 8, 2019*

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## 1. General Provisions

See the “Sumo” General Contest Rules.

## 2. Requirements for the Robot

For General Requirements for the Robot see the “Sumo” General Contest Rules.

Additional Requirements for the Robot:

- height - not more than 500 mm;
- width - not more than 250 cm;
- length - not more than 250 mm;
- weight - not more than 3000 g.

The robot must be human-like in appearance, moving with the support on two legs, and during the movement or at rest the left foot projection onto the field must not overlap the right foot, and vice versa.

The robot should have the following parts:

- torso;
- head;
- two hands;
- two legs.

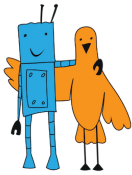
The robot legs are inseparable parts of the robot, and the only parts in contact with the surface of the ring. The robot’s knee joint must bend in the direction of the human knee flexion.

The feet can be of any length and shape, subject to the following requirements:

- the maximum foot length must be less than half the total length of the robot leg;
- the use of rolling supports (rollers, wheels, etc.) is prohibited.

The leg length is the distance between the support surface and the axial line of the crural joint when the knee joint is maximally unbent, measured in the standing position of the robot.

The length of each arm must not exceed the length of the leg.



## 3. Specifications of the Field

For General Field Specifications see the “Sumo” General Contest Rules.

Additional Ring Specifications

- height – 50 mm;
- diameter – 1540 mm;
- width of the ring boundary – 50 mm;
- minimum external space – 1000 mm;
- two contrasting-colored marks are placed in front of each other at a distance of 350 mm from the center of the ring;
- the coating is matte.

## 4. Contest Procedure

For General Contest Procedure see the “Sumo” General Contest Rules.

The Judge may stop the round if the robots have not touched each other for more than 15 seconds and it is not clear whether this will happen in the future.

In the case of an “off-ring” action, the participant must place the robot in the opposite of the opponent quadrant within 10 seconds so that the projection of the robot crosses the white boundary line. The Operator must maximally avoid the visibility of the opponent's robot sensors. The points obtained as a result of the robot's response to the Operator are not counted.

## 5. Violations

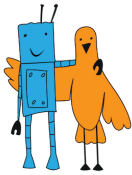
For General Violations see the “Sumo” General Contest Rules.

Additional Violations:

- failure to comply with the robot's placement procedure after the “off-ring” action.

## 6. Scoring

Effective game actions in a round are defined and evaluated as follows:



- "Fall" - the robot spontaneously touched the ring with the third point of support. The opponent is awarded a 0.1 (tenth) point.
- "Knockdown" - the robot is forced to touch the ring with the third point of support. The opponent is awarded a 0.25 (quarter) point.
- "Off-ring" - any part of the robot touches the surface outside the ring. The opponent is awarded a 0.5 (half) point.
- "Knockout" - the robot didn't manage to stand up within 10 seconds or cannot move for 10 seconds. The opponent is awarded 1 (one) point.

"Third point of support" - any part of the robot except the supporting surface of the feet.

## **7. Procedure for Determining the Winner**

For General Procedure see the "Sumo" General Contest Rules.

The winner of the round is the robot that scored 1 point, or the robot which score is closer to 1 point once the round time expires, in this case, the winner is given 1 point and the loser - 0 points.

If the game achievements are equal, a draw (0: 0) is declared in the round.