

4/7 giugno 2025

Centro congressi Fiera del Levante Bari Italia

RoboCup OnStage Regulations – First Steps Category

Objective

GOAL

The goal is to create a performance lasting at least one minute using robots in an engaging manner. This may include various types of performances such as dance, storytelling, theater, or artistic installations.

The performance can combine the presence of humans and robots on the stage platform, in a completely free manner.

The main focus should be the activity of the robot(s), but interaction and harmony between humans and robots is appreciated and encouraged.

Teams are encouraged to be creative, innovative, and entertaining, both in the robot setup and in the creation and execution of the performance.

1. Teams and Supervisors

- 1.1. Team members' age: 5 to 9 years old.
- 1.2. Minimum and maximum number of team members: The team must consist of 2 to 5 members.
- 1.3. Teams must have a supervisor aged 19 or older who accompanies and assists the team.
- 1.4. Each team member must have a role within the team.
- 1.5. Each participant may only be part of one team. Members cannot be shared across teams and/or leagues.

2. Spirit and Behavior

- 2.1. All participants (team members and supervisors) must behave respectfully and cooperatively toward other contestants, volunteers, judges, and organizers.

3. Stage

3.1. The stage performance area is a rectangular space of 5x4 meters, with the 5-meter side facing the judges.

3.2. The floor provided will be a flat (non-glossy) white surface, such as painted MDF (pressed wood fiber).

Floor joints will be as smooth as possible, but robots must be prepared to handle irregularities up to 5 mm. Despite best efforts to ensure a flat surface, this may not always be possible.

4. Robots

4.1. Teams must use during the performance:

- 4.1.1. More than one robot OR
 - 4.1.2. A single robot implementing at least one sensor and using it for human-robot interaction.
 - 4.1.3. Teams are encouraged to create costumes and/or specific decorations for their robots.
 - 4.1.4. The use of stage props to enhance the performance is encouraged.
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5. Music and Multimedia Presentations

- 5.1. Teams are invited to provide a video or slideshow presentation as part of their performance.
 - 5.2. If a team uses copyrighted music, they must comply with copyright laws of the event's region.
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6. Communication and Localization

- 6.1. Robots are encouraged to communicate with each other during the show. Suggested and allowed communication protocols include infrared (IR) and Bluetooth (LE and classic). Wifi is not allowed.
 - 6.2. There must be no communication with off-stage or off-scene devices.
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Judging Criteria

Total Score Composition:

- Technical Document – 15%
- Stage Performance – 50%
- Interview – 35%

1. Technical Document

- 1.1. The technical document presents the work done. Teams must outline robot features, types, software, and any other relevant technical preparation.
- 1.2. It can be written following the guidelines issued by the RoboCupJunior OnStage League Committee.

2. Stage Performance

- 2.1. Two performances are allowed; the better of the two will be evaluated.
- 2.2. Minimum duration: 1 minute, using robots in a non-repetitive and engaging way.
Each team has 7 minutes total for setup, introduction, performance, and clearing the stage.
- 2.3. Robots must be started simultaneously by team members at the beginning of the performance.
- 2.4. Penalties:
 - 2.4.1 3 points for robots leaving the stage
 - 2.4.2 3 points for restart
 - 2.4.3 3 points per minute for not clearing the stage on time
- 2.5. People on stage:
 - 2.5.1 Team members may perform with robots but must avoid hiding key robotic actions from judges/audience.

2.6. Restart:

2.6.1 Allowed, but with point deductions. Must be clearly announced on stage. Teams must exit promptly after time ends.

2.7. Performance preparation:

2.7.1 Teams are responsible for ensuring correct playback of music/video before the first performance in collaboration with the RoboCupJunior OnStage AV staff.

2.8. Content:

2.8.1 Performances must not include violent, military, threatening, or criminal elements. Inappropriate or offensive language/music/images are forbidden.

2.9. Safety and Energy:

2.9.1 Mains electricity is not allowed. Each robot must run on battery (max 15V).

2.9.2 Robots must be easily transportable and manageable by team members.

3. Interview

3.1. Judges will interview teams during the event. Questions will cover individual and team contributions to the project. Teams must bring all used robots and programming devices.

A paper copy of the code may be optionally presented.

3.2. Interview duration: 10 minutes

3.3. Translator:

3.3.1 If needed, teams must inform officials in advance.

3.3.2 No extra time will be granted for using a translator.

Scoresheet Summary

Areas Evaluated:

- Interview
- Technical Document
- On-Stage Performance

The following pages present the evaluation criteria for each area, accompanied by explanatory examples on how certain scores can be achieved. These examples are not mandatory requirements but are intended to provide a reference guideline for both the participating teams and the jury. Teams must demonstrate their understanding of their robots during the Technical Interview and in the Technical Document.

For the Stage Performance and Technical Document areas, each section is accompanied by a caption describing the level achieved. After evaluating each section, the jury will select the corresponding level by ticking the appropriate box according to the score awarded. Interview Criteria (1–9 or 1–8 points):

- Hardware knowledge (from 1 to 9 points)
- Software knowledge (from 1 to 9 points)
- Communication clarity (from 1 to 9 points)
- Teamwork (from 1 to 8 points)

Performance Criteria

- Showmanship/coordination (high/medium/low) (from 1 to 25 points)
 - Originality of the idea (high/medium/low) (from 1 to 25 points)
 - Penalties:
 - -3 points for robots that leave the stage
 - -3 points for each restart
 - -3 points per minute for not clearing the stage at the end of the 7 minutes (no deductions will be applied if the issue is not the team's fault)
- Technical Document Criteria (1–4 or 1–3 points):

TECHNICAL DOCUMENT

- Clarity of presentation (low/medium/high) (from 1 to 4 points)
- Documentation with images of materials used (yes/partial/no) (from 1 to 3 points)
- Description of the robots (low/medium/high) (from 1 to 4 points)
- Description of the software (low/medium/high) (from 1 to 4 points)

EXPLANATORY EXAMPLES

INTERVIEW

Hardware knowledge (from 1 to 9 points)

- ❖ Ability to explain material choices in the project ☐ /2
- ❖ Ability to explain the role of sensors and how they are used ☐ /3
- ❖ Sustainable design choices ☐ /2
- ❖ Additional innovations to be applied in future competitions (use of new sensors, additional materials, etc.) ☐ /2

Software knowledge (from 1 to 9 points)

- ❖ Ability to explain the choice of programming language ☐ /3
- ❖ Ability to explain difficulties encountered in programming ☐ /2
- ❖ Ability to distinguish individual instructions in the chosen language ☐ /2
- ❖ Innovations to be applied in future competitions at the software level ☐ /2

Clarity of presentation (from 1 to 9 points)

- ❖ Clear language ☐ /2
- ❖ Correct terminology ☐ /2
- ❖ Completeness in responses ☐ /3
- ❖ Awareness ☐ /2

Teamwork (from 1 to 8 points)

- ❖ Demonstration of the work done, specifying who did what ☐ /3
 - ❖ Ability to collaborate or intervene to elaborate on a topic ☐ /2
 - ❖ For additional innovations, specify how they plan to approach them, who to ask for further insights, and how they plan to divide the work ☐ /3
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ON-STAGE PERFORMANCE

Showmanship/coordination (low/medium/high) (from 1 to 25 points)

- ❖ The theme is clearly conveyed throughout the performance.
- ❖ The performance entertains and elicits positive reactions from the audience.
- ❖ Effective use of space and scenery.
- ❖ Robot costumes add value to the performance.

Originality of the idea (low/medium/high) (from 1 to 25 points)

- ❖ Robots perform risky or difficult movements
- ❖ Robot movements are not repetitive
- ❖ Interaction between robots and/or humans is interesting
- ❖ The scenery contains interactive objects that contribute to the stage performance

Penalties:

- -3 points for robots that leave the stage
 - -3 points for each restart
 - -3 points per minute for not clearing the stage at the end of 7 minutes (no deductions will be applied if the problem is not the team's fault, e.g., if the audiovisual accompaniment fails to start)
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TECHNICAL DOCUMENT**Clarity of presentation** (low/medium/high) (from 1 to 4 points)

- ❖ Project overview, clearly and coherently described ☐ /2
- ❖ Challenges faced in the project and how they were overcome are clearly outlined ☐ /1
- ❖ The project's highlight is consistent and clearly described ☐ /1

Documentation with images of materials used (low/medium/high) (from 1 to 3 points)

- ❖ Robot images included ☐ /1
- ❖ Image of the programming language used included ☐ /1
- ❖ Additional image included ☐ /1

Description of the robots (low/medium/high) (from 1 to 4 points)

- ❖ Type of robot is specified and correctly described ☐ /1
- ❖ Use of sensors is indicated and consistent with the project ☐ /1
- ❖ Battery choice is consistent and appropriate for the robot used ☐ /1
- ❖ Microcontroller is indicated and consistent with the robot used ☐ /1

Description of the software (low/medium/high) (from 1 to 4 points)

- ❖ Choice of programming language is consistent ☐ /1
- ❖ Image of the code matches the chosen language ☐ /1
- ❖ Additional description of the program or language used ☐ /2

