robotex International

ANIMAL RESCUE RULES

COMPETITION COORDINATOR

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Contents

1 Introduction 3

2 The Competition 3

2.1 Definition and requirements 3

2.2 Format 3

2.3 Sub-classes 4

2.4 Field Specifications 4

2.5 Technical Inspection and registration 5

3 Core Tournament Regulations 6

3.1 Robot Hardware & Control Spefications 6

3.2 On-field Rescue Mission Rules 7

3.3 Handling the robots between the matches 7

3.4 Lighting conditions 8

3.5 Delay of the competition 8

4 Scoring 8

4.1 Scoring Formula 8

4.1.1 Scoring table 1: Animal Point Scale 9

4.2 Valid Rescue Definition 9

4.3 Final Team Ranking 9

5 Organizing the competition 10

6 Changes and cancellations in the rules 11

7 Organizing 11

7.1 Lighting and infrared noise 11

7.2 Winners one-year break 11

8 Appendix 1. Figure of match area 12

9 Revision history 13

1 Introduction

Animal Rescue is an advanced programming robotics challenge for student competitors. The core objective requires participating teams to build an autonomously controlled robot that navigates the competition field and completes designated animal-rescue missions within regulated time limits. This event is designed to cultivate participants' hands-on construction, programming, and on-site decision-making capabilities while prioritizing competitors' practical competition experience.

2 The Competition

2.1 Definition and requirements

1. This is a team-only competition; each registered **team shall consist of a maximum of two individual participants**. The Tournament Committee reserves full authority to group competing teams by age bracket and total registered entry count.
2. All competitors must abide by all published competition rules, clauses and scoring criteria; match verdicts are finalized by on-site referees in accordance with official regulations. Competitors shall wear event-provided bibs/attire plus official competitor badges to gain field access.
3. **No restrictions apply regarding robot brand, manufacturer or hardware model**; all spare parts brought into the competition venue must be fully pre-disassembled prior to official check-in. The Tournament Committee retains the right to split competition divisions based on robot equipment specifications.

2.2 Format

The event **consists of one core phase: On-field Animal Rescue Mission**.

1. Animal Rescue Challenge: Each rescue round has a maximum runtime of 2 minutes for robots to complete full animal retrieval tasks.

2.3 Sub-classes

- Robotex Animal Rescue competition takes place in two age groups:
    - **U19** - At the competition day up to 18 y.o. (including 18 y.o.) .
    - **U14** - At the competition day up to 13 y.o. (including 13 y.o.) .
- The age group of a team is determined based on the age of the **oldest team member**.
- You must register your team to a correct age category. If during the competition it turns out, that the team is registered to an incorrect age category, the robot of this team will be disqualified from the competition. **NB!** Teams who belong to the younger age group are allowed to compete in the older age group.
- The organizers reserve the right to check the age of the competitors during the competition. In case of violation the robot of the team, who violated the rules will be disqualified.

2.4 Field Specifications

1. Total playable field area: between **3 m² and 5 m²**.
2. A continuous 2cm-width black guideline runs through the field center, linking four independent Animal Rescue Sub-zones.
3. One single animal species is placed inside each rectangular-black-marked Animal Rescue Sub-zone; no sub-zone contains more than two animal models. Species orientation, placement position and quantity are randomized pre-round, with identical field setup provided for all competing teams in the same match group. Detailed point breakdowns refer to Clause 4 Scoring Rules.
4. All rescue-target animal models: height 5cm–15cm, weight 20g–150g, maximum planar projection ≤15cm ×15cm. Official animal roster to be announced onsite (available species: Kangaroo, Giraffe, Penguin, Koala, Pelican, Sea Turtle, Fennec Fox, Red Fox, etc.).

2.5 Technical Inspection and registration

The robot needs to pass technical inspection before the competition. During the inspection, it is checked whether the robot or the operator who is handling the robot meets the paragraphs requirements. **Only one team member with a robot** *(the currently selected robot operator)* **can come to the technical inspection. If necessary, they can have a translator or team instructor with them.** The purpose of this is to guarantee a smooth course of the competition and technical inspection.

3 Core Tournament Regulations

3.1 Robot Hardware & Control Spefications

1. Every competing robot must operate on fully autonomous programmed logic; referees retain the right to inspect robot source code should any concerns regarding autonomous functionality arise.
2. Pre-match inspection dimension limit (before competition run): maximum footprint **16cm ×16cm (L×W)**; no fixed height cap; total robot weight capped at 2kg. In-match dimensional expansion is permitted with upper limit of **25cm ×25cm (L×W)** after mechanical deformation.
3. Teams may deploy any mechanical mechanism for animal retrieval, provided no permanent damage/modification to the competition field or safety hazards to personnel are created.
4. Netting, cordage and all rope-style components (including official LEGO cord accessories) are strictly prohibited.
5. All fixation hardware (adhesive glue, suction cups etc.) designed to permanently secure rescued animals onto the robot chassis is forbidden.
6. Referees hold full authority to re-measure deformed robot dimensions if maximum size compliance is disputed.
7. Each robot must feature a dedicated physical button to trigger start/stop of robot movement.
8. One standalone robot per team is permitted on the competition field per round; robot disassembly onsite during matches is not allowed.

3.2 On-field Rescue Mission Rules

1. Prior to mission initiation, the full robot body must rest entirely within the designated Start Zone; robot planar projection should never overlap the black guide trace.
2. The robot must initiate movement within 5 seconds of the official referee start signal; failure to move within this 5-second window results in a zero score for the respective round.
3. Single-round rescue time cap: 2 minutes. If incomplete animal retrieval upon timer expiry, scoring is based solely on the quantity of animals successfully rescued before timeout. Competitors may manually signal referees for early round termination to stop the countdown timer.
4. Post-completion of each rescue round, teams shall retrieve their robot and wait for official match call-up for subsequent rounds.
5. **Round termination triggers (all scenarios below end current round immediately; only animals rescued prior to trigger count toward scoring):**
    a. Unauthorized manual physical contact between competitor and robot within the 2-minute timed window;
    b. Full robot planar projection deviates entirely from the black guide trace mid-challenge;
    c. Any robot component detaches and falls onto the competition field surface during the timed rescue.
6. Exception clause: No trace deviation penalty applies if the robot is fully positioned inside an Animal Rescue Sub-zone with its projection off the main black guide trace.

3.3 Handling the robots between the matches

1. Teams may remove their robot from the competition field for debugging while other teams from their division compete in their respective rounds.
2. Competitors are prohibited from removing robots out of designated team preparation areas at any stage; unauthorized removal counts as voluntary match forfeit.
3. No in-field robot modification is permitted during active rescue rounds. Referees may conduct unplanned weight/dimension spot-checks at any time; teams failing compliance inspection receive immediate full disqualification.

3.4 Lighting conditions

The lighting in the area needs to be as close to real sunlight as possible *(Midday)*, with consistent color and stability. Field cannot have shadows while the match is running. Lighting is allowed to change between matches. The competition area must be evenly lit.

3.5 Delay of the competition

When competitions start to delay, organizers have the authority to act in accordance with rules to minimize the delays and bring the competition back on schedule.
The competition will continue as smoothly as possible, eliminating any rematches or any moments that could cause delays, and instead using a less time-consuming judging system based on rules. Any objections will not be accepted during the delay, and competition will not be delayed to resolve the objections. If the robot cannot be found in the designated area, the match will result in a loss.

4 Scoring

4.1 Scoring Formula

The score is calculated based on the number of effectively rescued animals. The scoring method is as follows: the sum of the quantity of each animal type multiplied by its corresponding point value, multiplied by the number of distinct animal species rescued, equals the final score.

$$\boldsymbol{TotalScore} = \left[\sum(\text{Quantity per Animal Species} \times \text{Single-Species Point Value})\right] \times \text{Total Un}$$

4.1.1 Scoring table 1: Animal Point Scale

Animal Name	Point Value per Unit
Kangaroo	1
Giraffe	1
Penguin	2
Fennec Fox	3
Sea Turtle	3
Red Fox	4
Koala	4

Calculation Example

Valid rescue tally: 2 Kangaroos, 1 Giraffe, 1 Koala

Score calculation: $(2 \times 1 + 1 \times 1 + 1 \times 4) \times 3 = \mathbf{21}$ total points

4.2 Valid Rescue Definition

An animal counts as successfully rescued if any part of its body makes physical contact with the designated Finish Zone upon round completion.

4.3 Final Team Ranking

Each team's official tournament final score equals their highest single-round score across all available match rounds (total round count published pre-event by Tournament Committee).

1. **Tiebreaker rule:** For teams with identical top scores, rankings are determined by shorter effective finish time of their highest-scoring round.
2. **Timer activation:** Official match timer starts upon referee's start signal; if robot remains stationary inside Finish Zone, teams may signal early timer stop and lock in recorded elapsed time for tiebreaker use.

5 Organizing the competition

1. Official competition field drawings and tuning reference drawings are manufactured from identical base material.
2. All robots must complete mandatory pre-event check-in prior to matches; check-in covers dimension inspection, weight verification, start-button functionality test and unique identification sticker labelling, which determines official match starting order.
3. Mandatory pre-event technical inspection must be completed within the committee's published deadline; missed inspection results in automatic competition forfeit.
4. Full finalized tournament bracket format is released uniformly by the Organizing Committee after registration closes.
5. Referees and event hosts possess final authoritative judgment for all on-site disputes. All formal appeals must be submitted to referee staff during or immediately after the affected match; late appeals receive no review. Tournament management reserves full rights of final ruling and rule interpretation on all unresolved matters not specified in written regulations.
6. This official rulebook serves as the sole binding reference for all referee decisions; the on-site referee panel holds ultimate adjudication power for all unlisted competition incidents.

6 Changes and cancellations in the rules

Changes and cancellations made to the rules are adopted by the main organizer of the competition according to the regulation of the regulatory committee of the competition.

7 Organizing

7.1 Lighting and infrared noise

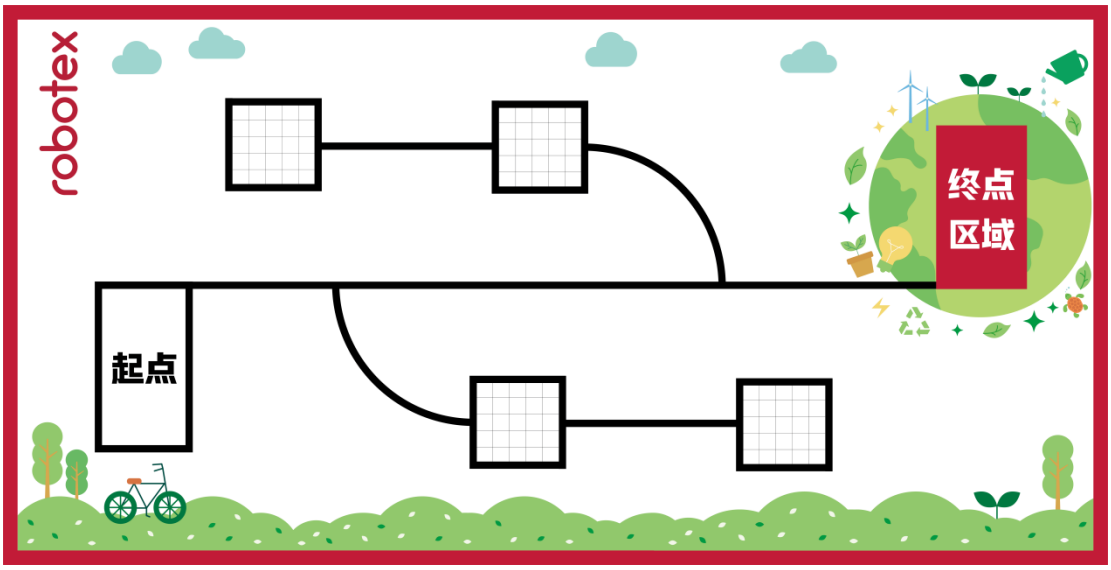
The arena has at parts uneven lighting and infrared noise, which may disrupt the work of sensors during the competition. For this reason, the organizers recommend using covers or blinds for sensors, testing the sensors under intense lighting conditions or even under direct sunlight to imitate the lighting conditions of the competition arena.

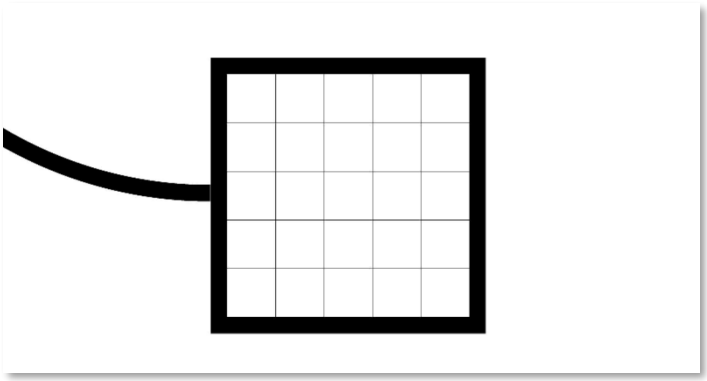
7.2 Winners one-year break

Winners of 1st place cannot compete in the same category next year– they must take a one-year break from that category. At least 50% of the team must consist of non-winners. If the winners' team has three members, next year they should have at least one new member who was not previously on this team to compete in the same category again instead of taking a year off from it. *This rule is aimed at bringing new people, giving everyone a fair chance and encouraging recurring winners to try new competitions they usually do not participate in and to educate and engage new beginners in the field of robotics.* *****

*** The rule complies only with Robotex International standards and is used for Robotex International competition.**

8 Appendix 1. Figure of match area





9 Revision history

1. 28.07.2026 Rules are created.
2. 28.10.2026 **Removed Assembly time. – Robot should be pre-assembled.**