

THE P.AI GAMES

OFFICIAL RULEBOOK V1.1

Competition operations, eligibility, scoring and safety

TEL AVIV, ISRAEL // MAY 18-19, 2027

US\$1,000,000 TOTAL CASH PRIZE

US\$500K Grand Laureate · 7 × US\$50K competition winners · 2 × US\$75K special awards

Research teams, universities, startups, independent teams and mixed consortia may compete using their own or third-party robot platforms. Humanoids are not required; arm-plus-AMR and other safe mobile-manipulation configurations are eligible. Declared teleoperation is permitted in the inaugural Games and receives a deduction from the final score.

THE P.AI GAMES // TEL AVIV // MAY 18-19 2027

Inaugural World Championship // Tel Aviv, Israel // May 18-19, 2027

This rulebook defines the operating rules for the first international real-life Robogames: physical robots doing real human-world work under public timing, safety oversight and transparent scoring. Version 1.1 adds T-07 The SLAM Gauntlet, the unstructured obstacle trail designed to demonstrate mapping, localization and safe navigation.

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At-a-glance operating facts

Item Requirement

Teams 32 qualified robot teams

Competitions 7 real-world trials

Prize pool US\$1,000,000

Venue Expo Tel Aviv, Pavilion 2, Rokach Boulevard 101, Tel Aviv-Yafo, Israel

Control modes Autonomous, supervised teleoperation or hybrid, when truthfully declared

Spectator price Early-bird 2-day pass US\$89; standard price US\$199; no payment on waiting-list registration

Official timetable

May 17, 2027

Scrutineering day: 06:30 paddock opens; 08:00 mass inspection; 10:15 RF spectrum; 13:00 dual-channel E-stop; 15:30 battery containment; 17:30 team briefing and arena walk; 20:00 parc ferme sealed.

May 18, 2027

Competition day 1: 08:30 spectator doors; 09:30 opening ceremony; 10:00 T-02 Threshold Breach; 13:30 T-01 Porcelain Protocol; 16:00 T-05 Heavy Haul; 18:30 Day 1 podium; 19:30 arena closes.

May 19, 2027

Competition day 2: 08:30 spectator doors; 09:30 T-04 Deformable Matrix; 11:45 T-03 Precision Coating; 15:00 T-06 Unbox & Assembly; 16:45 T-07 SLAM Gauntlet; 18:00 innovation bounties; 19:30 Grand Laureate; 21:00 close.

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Article 1 — Event identity and purpose

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The P.AI Games is the inaugural international real-life Robogames and the first public championship designed to measure physical AI under shared, repeatable, spectator-visible rules.

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The event takes place in Tel Aviv, Israel on May 18-19, 2027, with closed technical scrutineering on May 17.

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The mission is to move robotics from edited demonstrations to trusted public evidence: one arena, one clock, one rulebook and a permanent scoreboard.

Operational standard

This article is binding on competitors, operators, technical delegates, stewards and accredited team staff. Any exception must be written as a steward bulletin, timestamped, and made available to all affected teams before the relevant gate closes.

Evidence sources

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Official telemetry bundle

-

High-speed camera archive

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Referee LiDAR and optical mesh

-

Steward inspection notes

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Article 2 — Eligibility and team status

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Invited companies, universities, labs and independent builder teams may enter one primary robot platform and declared auxiliaries.

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Every entrant must designate a team principal, legal entity, responsible safety officer and one accountable operator for any teleoperation or hybrid-control mode.

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Teams retain 100% ownership of intellectual property, source code, models, datasets and mechanical designs.

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Article 3 — Control mode declaration

Inaugural scoring rule

Declared teleoperation is permitted. Race Control records the raw task score and applies the published teleoperation deduction to the final score after the run. Hybrid entries receive the deduction whenever operator commands influence task execution. Emergency-stop use is treated as a safety action, not task assistance. Undisclosed operator input may invalidate the run.

Platform eligibility

The entrant does not need to manufacture the robot. Research teams, universities, startups, independent teams and mixed consortia may compete on third-party platforms. Eligible morphologies include humanoids, arm-plus-AMR systems, wheeled single- or dual-arm mobile manipulators, quadrupeds with manipulators and other configurations that pass the safety envelope.

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Teams must declare whether each run is autonomous, supervised teleoperation, hybrid autonomy plus teleoperation, or exhibition teleoperation.

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Teleoperation is permitted only when declared before the run, logged in the official telemetry bundle and approved in the safety review.

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Hidden human navigation input, undisclosed model switching or unlogged remote assistance is an immediate DNF and may remove the team from Grand Laureate ranking.

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Article 4 — Robot technical envelope

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Robots must fit the published transport and arena envelope, pass mass inspection and demonstrate stable recovery from commanded stop.

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Electrical systems must use labeled isolation, fused high-current paths and visible charge-state indication.

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End-effectors must be inspected for pinch, cut, puncture, crush, thermal and projectile hazards before credential activation.

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Article 5 — Paddock and garage operations

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Each team receives a 40 m2 ESD-safe garage, secure parts cage, 3-phase power feed and isolated 100 Gbps optical telemetry lane.

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Hot work, battery service and pressured pneumatic work require steward sign-off.

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No hardware or software change after parc ferme may be made without a logged steward ticket.

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Article 6 — Scrutineering

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Mass inspection verifies weight, appendage span, payload and declared center of mass.

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RF clearance verifies telemetry, operator links, emergency channels and non-interference with broadcast and referee systems.

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Dual-channel E-stop validation checks wireless stop, physical kill switch, deadman behavior and supervised recovery. Battery containment validates UN3480/UN3481 paperwork and thermal runaway enclosure.

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Article 7 — Arena procedure

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Each run begins at gate release and ends at official finish signal, DNF, red flag or steward abort.

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Teams receive only the public brief for the trial; randomization and unseen elements are revealed at the published release point.

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No second attempt is granted for performance failure. Restart is permitted only for confirmed arena-system fault.

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Article 8 — Scoring and timing

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The official clock is millisecond-resolved and synchronized with high-speed cameras, LiDAR, referee sensors and telemetry intake.

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Scores combine completion, object care, accuracy, safety, speed and trial-specific bonus conditions.

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Penalty and DNF decisions are published with evidence references whenever possible.

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Article 9 — Safety and red flags

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Any condition that may endanger spectators, staff, team members or the robot triggers immediate red flag authority.

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The autonomous referee can trigger stop recommendations; human safety marshals retain hard-stop authority.

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A DNF may be issued for breakage, dangerous contact, leaving the course, unstable battery behavior, unsafe operator link loss or noncompliance with control-mode disclosure.

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Article 10 — Telemetry and audit

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Teams must provide required timing, torque, temperature, power, control-state and autonomy/teleoperation-state signals.

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T-07 additionally requires pose trace, map update rate, loop-closure confidence, obstacle-class detections and

operator-input channel logs when relevant.

-

Official results are not final until telemetry audit and compliance confirmation are complete.

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Article 11 — Prize matrix

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Total prize pool is US\$1,000,000.

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Grand Laureate: US\$500,000 plus Gold Titanium Trophy for the highest overall verified performance across eligible events.

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Seven Competition Winners: US\$50,000 per competition. Special awards: US\$75,000 Most Efficient Energy Run and US\$75,000 Superior Tactile Dexterity.

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Article 12 — Protests and appeals

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Written protests must be submitted within the published window with exact run ID, rule reference and requested remedy.

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The steward tribunal reviews synchronized video, referee output, telemetry and safety logs.

-

Tribunal rulings are final for event standings.

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Article 13 — Freight, batteries and customs

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Teams must declare lithium batteries under UN3480/UN3481, hazardous tools, pressurized systems and spare energy packs.

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Inbound crates use the logistics gate only and must remain sealed until garage check-in.

-

Outbound freight opens after the closing ceremony and must clear within the published 24-hour window unless special approval is granted.

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Article 14 — Media, public display and data

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The event is live, ticketed and broadcast. Robots, operators, garages and runs may be filmed in all public and competition zones.

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Sensitive IP may remain private inside team-controlled systems; official telemetry required for scoring is retained for audit and public result summaries.

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Teams may publish their own technical postmortems after the event subject to safety and sponsor restrictions.

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Trial sheets

Every trial sheet below is binding unless a later steward bulletin is published. Measurements are verified by official sensors and telemetry audit.

T-01 // THE PORCELAIN PROTOCOL

Dishwasher loading

Objective. Load fragile plates, cups, bowls and cutlery into a consumer dishwasher without fracture, mis-slotting or collision.

Arena. Dishwasher bay, randomized sink-side tray, acoustic fracture sensors, wet-grip objects.

Constraints

-

Object ID and handling order published only at gate release

-

No adhesive grippers, destructive clamps, or pre-tagged utensils

-

85 dB acoustic red flag for impact events

Scoring

-

- 250 complete safe load

-

- 150 optimal rack geometry

-

- 100 zero-touch correction

-

- 25 minor orientation fault

Disqualification trigger. Immediate DNF for cracked ceramic, jammed rack, exposed sharp edge, or safety boundary breach.

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T-02 // THE THRESHOLD BREACH

Unfamiliar door opening

Objective. Open three different unmapped doors and cross each threshold without damaging hardware.

Arena. Residential handles, pull/push ambiguity, spring hinges, door mats, threshold lips.

Constraints

-

No prior CAD of doors

-

No fiducials or external beacons

-

Robot must infer push/pull and latch mechanics live

Scoring

-

- 200 each clean threshold

-

- 100 first-attempt classification

-

- 50 contact over force limit

Disqualification trigger. Immediate DNF for broken handle, shoulder strike, trapped limb, or external operator navigation.

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T-03 // PRECISION COATING

Wall painting

Objective. Paint a live wall segment to target thickness while avoiding sockets, edges and protected trim.

Arena. 2.4 m wall with surface defects, masked no-go zones, laser thickness scan.

Constraints

-

0.25 mm target wet film thickness

-

No tape over live sockets

-

Brush, roller or sprayer allowed after inspection

Scoring

-

- 300 uniform coverage

-

- 150 edge protection

-

- 100 speed bonus inside tolerance

-

- 50 drip/sag

Disqualification trigger. Immediate DNF for socket contact, paint outside red exclusion, tool drop into spectator-facing zone.

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T-04 // THE DEFORMABLE MATRIX

Laundry folding

Objective. Fold fifteen mixed garments into stable stacks that survive an angle and lift test.

Arena. Fabric bin, shirts, towels, trousers, asymmetric and elastic garments.

Constraints

-

No garment tags or visual markers

-

Bimanual or multi-effector manipulation allowed

-

Final stack must pass 90-degree stability presentation

Scoring

-

- 20 per accepted garment

-

- 100 stack stability

-

- 75 time bonus

-

- 10 crease/alignment fault

Disqualification trigger. Immediate DNF for tearing fabric, dropping garment outside bay, or unsafe arm sweep.

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T-05 // THE HEAVY HAUL

Refuse handling

Objective. Move a 12 kg wet refuse bag to a 240 L municipal cart, descend curb geometry and complete a route.

Arena. Bag, bin, curb descent, wet patches, cart lid and center-of-gravity monitoring.

Constraints

-

Bag integrity is scored continuously

-

Cart must remain upright

-

Robot must keep dynamic balance with shifting load

Scoring

-

- 300 delivered bag

-

- 100 no spill

-

- 100 stable cart handling

-

- 100 curb descent clean

Disqualification trigger. Immediate DNF for bag tear, liquid spill, cart overturn, or boundary breach.

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T-06 // UNBOX & ASSEMBLY

Flat-pack assembly

Objective. Unbox packaging, identify modular joinery, assemble with calibrated torque and pass a 20 kg stress test.

Arena. Shipping carton, hardware packets, flat-pack members, driver bits and validation press.

Constraints

-

No blade incursion into packed parts

-

Mixed fastener types and asymmetric panels

-

Torque driver calibration logged before first fastener

Scoring

-
- 100 packaging removal
-
- 300 complete square assembly
-
- 200 final press pass

Disqualification trigger. Immediate DNF for stripped fastener, structural misassembly, lost hardware in forbidden zone, or press failure.

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T-07 // THE SLAM GAUNTLET

Unstructured obstacle trail

Objective. Cross a previously unseen route as fast and safely as possible while building a live map, localizing continuously and planning secure paths.

Arena. 18 m x 6 m variable trail with cardboard boxes, tree branches, planters, broken pavement slabs, gravel, reflective glass fragments, curb transitions and narrow passage gates.

Constraints

-

No prior course map, fiducial tape, GPS beacon or human spotter guidance

-

Onboard LiDAR, depth cameras, radar, IMU, wheel odometry, tactile bumpers and proprioception allowed

-

Obstacle layout changes between heats to prove real SLAM, relocalization and dynamic planning

Scoring

-

Fastest safe crossing wins after penalties

-
- 200 map completion with loop-closure confidence above threshold
-
- 100 secure traversal of broken pavement, glass-debris zone and narrow gate without slip or displacement

Disqualification trigger. Immediate DNF for leaving corridor, contacting glass hazard with unprotected actuator, tipping, moving a major obstacle more than 20 cm, or undisclosed human navigation input.

T-07 technical clarification

-
- The route is intentionally unstructured, and exact obstacle placement is hidden until gate release.
-
- Boxes, trees, pavement breaks, glass-debris zones and gates are safe engineered props, but are scored as real-world hazards.
-
- The winner is not simply the fastest machine; the winning run is the fastest secure crossing after safety penalties, map-quality checks and obstacle-contact review.
-
- Teams must preserve a time-aligned SLAM log so stewards can verify localization continuity, relocalization behavior and undisclosed-assistance absence.

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