

THE P.AI GAMES

CAD & BLUEPRINT BRIEFS V1.1

Arena envelopes and inspection references

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.

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Purpose

This brief gives teams the preparation envelopes they may model before the event. It does not disclose randomized placements, object serials or the final T-07 route layout.

T-01 // THE PORCELAIN PROTOCOL

Preparation envelope: Dishwasher bay, randomized sink-side tray, acoustic fracture sensors, wet-grip objects.

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Object ID and handling order published only at gate release

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

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85 dB acoustic red flag for impact events

Sensor datum pack: Official timing plane, LiDAR mesh reference, protected volumes and red-flag trigger positions are published in the team portal after invitation confirmation.

Modeling note: Teams may build simulation approximations for internal testing, but official scoring uses only the physical arena, official sensors and steward-verified run data.

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T-02 // THE THRESHOLD BREACH

Preparation envelope: Residential handles, pull/push ambiguity, spring hinges, door mats, threshold lips.

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No prior CAD of doors

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No fiducials or external beacons

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Robot must infer push/pull and latch mechanics live

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T-03 // PRECISION COATING

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

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0.25 mm target wet film thickness

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No tape over live sockets

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Brush, roller or sprayer allowed after inspection

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T-04 // THE DEFORMABLE MATRIX

Preparation envelope: Fabric bin, shirts, towels, trousers, asymmetric and elastic garments.

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No garment tags or visual markers

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Bimanual or multi-effector manipulation allowed

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Final stack must pass 90-degree stability presentation

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T-05 // THE HEAVY HAUL

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

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Bag integrity is scored continuously

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Cart must remain upright

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Robot must keep dynamic balance with shifting load

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T-06 // UNBOX & ASSEMBLY

Preparation envelope: Shipping carton, hardware packets, flat-pack members, driver bits and validation press.

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No blade incursion into packed parts

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Mixed fastener types and asymmetric panels

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Torque driver calibration logged before first fastener

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T-07 // THE SLAM GAUNTLET

Preparation envelope: 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.

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Nominal corridor envelope: 18 m x 6 m; live route may snake within the boundary.

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Obstacle class library: boxes, branches, planters, curb blocks, pavement breaks, gravel, reflective glass fragments, narrow gates.

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Published references: boundary tape coordinates, marshal access lanes, hazard-exclusion zones and finish gate plane.

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Not published before gate release: final obstacle placement, route curvature, clutter density and exact passable gaps.

Sensor datum pack: Official timing plane, LiDAR mesh reference, protected volumes and red-flag trigger positions are published in the team portal after invitation confirmation.

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Open platform morphology

Arena envelopes are morphology-neutral. Humanoid, arm-plus-AMR, wheeled mobile-manipulation, quadruped-plus-arm and custom systems may enter when they remain inside the published safety and reach envelopes.