REAL-I Competition Guide

1 On-Site Competition Scenarios

Metal Parts Righting (10 pts)

Daily Chemical Bottle Pick & Place (15 pts)

Express Package Scanning (25 pts)

2 On-Site Competition Plan

2.1 Eligibility

All teams that submitted models for the real-robot competition will receive an initial on-site score during the opening round on the first day of the on-site competition. Teams that complete the ICRA 2026 Competition-only online registration by May 25 may revise their models on-site and update their scores.

ICRA 2026 Registration Site

ICRA 2026 Competition-only online registration.Please contact REAL-I 2026 staff to obtain the discount code for REAL-I 2026

2.2 Final Score Competition

Simulation Competition (20 pts)

Real-Robot Competition (30 pts)

On-Site Competition (50 pts)

2.3 Awards

Table1 Awards

Award	Quota	Eligibility Criteria	Prize
Champion	1	Team ranked 1st	Winners receive a $70,000 full-size humanoid robot
Runner-up	2	Teams ranked 2nd and 3rd	$5,000 cash prize per team
Third Place	3	Teams ranked 4th, 5th, and 6th	$2,000 cash prize per team
Robbyant Special Award	<=6	Teams using the LingBot-VLA model and win Champion, Runner-up, or Third Place.	$500 cash prize per team
Academic Achievement Award	10	Teams using the REAL-I 2026 platform may win awards for high-quality papers that acknowledge the competition, as assessed by the organizing committee.	$500 cash prize per paper

2.4 On-Site Competition Process

On-site teams may collect their own data or selectively use data collected on-site by the organizers and datasets released from the real-robot competition. Teams may tune and deploy models independently or request deployment by the organizers. Model submissions for evaluation must be queued with at least 1-hour intervals. A real-time leader-board will be displayed on-site.

June 1: Morning — opening ceremony and rules briefing. Afternoon opening round, in which all teams' final models submitted for the real-robot competition are evaluated on-site sequentially to obtain each team's initial score.

June 2: Metal Parts Righting competition.

June 3: Daily Chemical Bottle Pick & Place competition.

June 4: Express Package Scanning competition; results announcement and award ceremony.

2.5 On-Site Scenario Specifications and Scoring Criteria

The on-site competition features three scenarios. Each scenario has two difficulty levels with different scoring configurations.

Evaluation Limit — Each submitted model may attempt up to 3 evaluations per scenario; the average score is taken.

Data Collection — 200 data samples are collected per task: 100 for Level 1 and 100 for Level 2 scenarios.

Inference Failure — If a single scoring action fails 3 consecutive attempts, the round is deemed failed. Any collision or abnormal event also results in round failure.

1) Metal Parts Righting

Scenario Description: Small parts are placed both face-up and face-down on a conveyor belt. The robot must grasp face-down parts with one hand, flip them, and place them face-up.

Total Score: 10 pts

Difficulty Levels and Scoring Criteria:

Level 1 (Total Score: 6 pts) — The conveyor belt is stationary. Within the robot's right-hand reach, there are 3 face-down metal parts,3 placed at random positions. The gripper grasps each part and completes the flip.

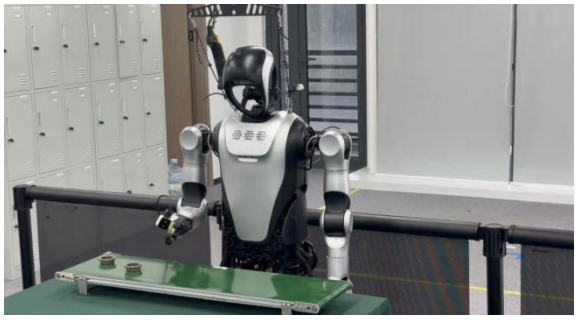

Figure 1: Metal Parts Righting - Level 1 Scenario Diagram

Scoring — Grasping a face-down part and completing the flip scores 1.5 pts;completing all parts scores 1.5 pts; Time limit per evaluation: 3 minutes.

Table 2: Metal Parts Righting - Level 1 Scoring Points

Scoring Point	Grasp face-down part and complete flip	All parts completed
Score (pts/count)	1.5	1.5

Level 2 (Total Score: 4 pts) — The conveyor belt is moving. There are 4 small parts: face-down and face-up 2 each, placed randomly within the right hand's reach. The right hand grasps face-down parts from the moving belt; face-up parts are identified but not manipulated.

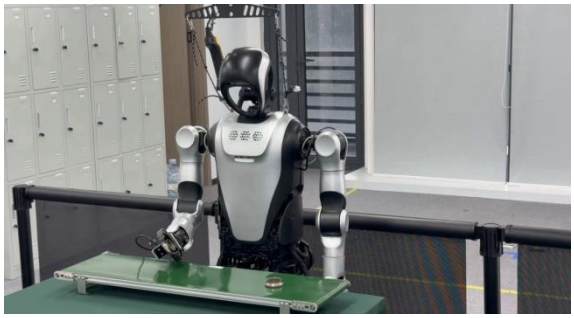

Figure 2: Metal Parts Righting - Level 2 Scenario Diagram

Scoring — 1 pt for grasping a face-down part and completing the flip; 1 pt for identifying face-up and moving away. Time limit: 5 minutes.

Table 3: Metal Parts Righting - Level 2 Scoring Points

Scoring Point	Grasp face-down part and complete flip	Identify face-up part and move away
Score (pts/count)	1	1

2) Daily Chemical Bottle Pick & Place

Scenario Specification: Bottles of identical specifications are randomly placed on a tabletop within the right hand's working radius. The right hand grasps each bottle and transfers it mid-air to the left hand, which then places it onto a conveyor belt. The conveyor belt work area falls within the field of view of the robot's head-mounted camera.

Total Score: 15 pts

Difficulty Levels and Scoring Criteria:

Level 1 (5 pts) — The right hand grasps one bottle and performs a mid-air handoff to the left hand, which then places the bottle steadily onto the conveyor belt.

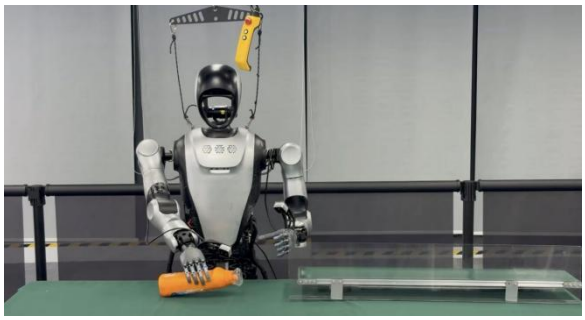

Figure 3 Daily Chemical Bottle Pick & Place - Level 1 Scenario Diagram

Scoring: 1 pt for successfully grasping the bottle without dropping; bimanual handoff scores 2 pts; the other hand places bottle on conveyor belt scores 2 pts;Time limit per evaluation: 3 minutes.

Table 4: Daily Chemical Bottle Pick & Place - Level 1 Scoring Points

Scoring Point	Successfully grasp bottle	Complete bimanual handoff	Place bottle on conveyor belt
Score (pts/count)	1	2	2

Level 2 (10 pts) — Two bottles of identical specifications are randomly placed within the right hand's working radius. The right hand grasps each bottle one at a time and performs a mid-air handoff to the left hand, which then places the bottles onto the conveyor belt one by one in a stable manner.

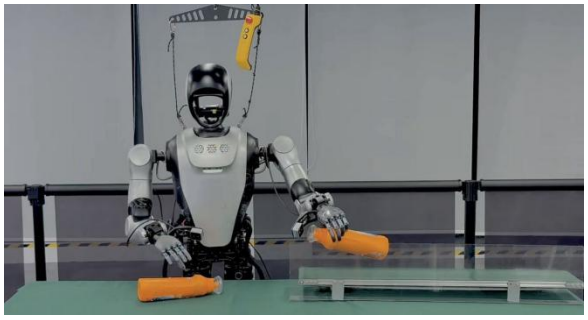

Figure 4 Daily Chemical Bottle Pick & Place- Level 2 Scenario Diagram

Scoring: 1 pt for grasping any bottle without dropping; bimanual handoff scores 2 pts; other hand places bottle on conveyor belt scores 2 pts. Time limit per evaluation: 6 minutes.

Table 5: Daily Chemical Bottle Pick & Place - Level 2 Scoring Points

Scoring Point	Successfully grasp bottle	Complete bimanual handoff	Place bottle on conveyor belt
Score (pts/count)	1	2	2

3) Express Package Scanning

Scenario Description: Grasp parcel from conveyor belt with one hand, place it on the label-scanning platform;left hand adjusts the parcel label faces up, then grasps with one hand and places on conveyor belt on the other side.

Total Score: 25 pts

Difficulty Levels and Scoring Criteria:

Level 1 (10 pts) — Two parcels placed one at a time: one label-up, one label-down; Right hand grasps nearby parcel and places on scanning platform; left hand flips label-down parcel and places it on conveyor belt.

Figure 5 Express Package Scanning- Level 1 Scenario Diagram

Scoring — Grasping and placing parcel on scanning platform scores 1 pt;successfully flipping label-down parcel and placing on scanning platform

scores 4 pts;placing on conveyor belt scores 2 pts. Time limit per evaluation: 6 minutes.

Table 6: Express Package Scanning - Level 1 Scoring Points

Scoring Point	Grasp parcel and place	Flip label-down parcel and place	Grasp and place on conveyor belt
Score (pts/count)	1	4	2

Level 2 (15 pts) — Three parcels placed simultaneously within the right hand's reach,1 label-up and 2 label-down; Right hand grasps nearby parcel and places on scanning platform; left hand flips label-down parcels and places on conveyor belt.

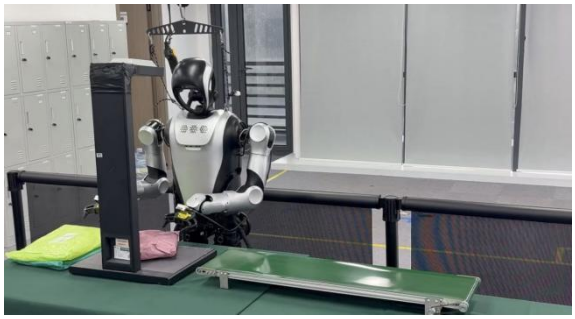

Figure 6 Express Package Scanning - Level 2 Scenario Diagram

Scoring — 1 pt for grasping and placing on scanning platform; 3 pts for flipping label-down parcel and placing on scanning platform; 2 pts for placing on conveyor belt. Time limit: 10 minutes.

Table 7: Express Package Scanning - Level 2 Scoring Points

Scoring Point	Grasp parcel and place	Flip label-down parcel and place	Grasp and place on conveyor belt
Score (pts/count)	1	3	2

2.6 On-Site Competition Schedule

Table 8 On-Site Competition Schedule

REAL-I On-Site Competition Schedule				
Date	**Time**	**Process 1**	**Process 2**	**Notes**
June 1	8:00 - 9:30	Team Registration	Official data collectors conducting data collection	
	9:30 - 10:00	Opening Ceremony & Competition Rules Briefing		
	10:00 - 17:00	Opening Matches		final models submitted on real-robot competition stage
	17:00 - 17:30	Daily Result Announcement & Expert Comments		
June 2	8:00 - 17:00	On-Site Challenge Scene 1: Metal Parts Righting		
	17:00 - 18:00	Daily Result Announcement & Expert Comments		
June 3	8:00 - 17:00	On-Site Challenge Scene 2: Daily Chemical Bottle Pick & Place		
	17:00 - 18:00	Daily Result Announcement & Expert Comments		
June 4	8:00 - 16:00	On-Site Challenge Scene 3: Express Package Scanning		
	16:00 - 16:30	Closing Demonstration	On-site team interviews	Select top 3 teams' models for the closing demonstration
	16:45 - 18:15	Award Ceremony,Hall C5		award ceremony and group photo