2026 TIRT AI Autonomous Vehicle All-Round Challenge

I.Competition Guidelines

I. Project Background

ShaYangYe has long been dedicated to advancing robotics education and strengthening industry connections, actively working to position Taiwan as a key global stage for international robotics competitions. Since 2018, it has co-hosted the "Taoyuan International New Generation Robotics Festival" with the Taoyuan City Government for eight consecutive years, pioneering the integration of four major robotics competition domains: land, sea, air, and maker. Over the years, the event has achieved remarkable results, attracting more than 12 million participants both online and offline and bringing together teams from 20 countries, with a total of 11,900 domestic and international teams participating. Through the establishment of robotics training and competition platforms, the initiative integrates industry resources, continuously expands the global perspective of Taiwanese participants, and is steadily building a cross-disciplinary international robotics event based in Taoyuan with a global outlook. Centered on diverse programming control and maker applications, the competition showcases Taiwan's strengths in smart manufacturing and technological innovation while serving as an important gateway to TIRT international competitions.

In 2026, the competition will introduce the new Smart City Driving Training Challenge and AI Gripper Mission Challenge events. Building on the experience of previous Maze Robot Challenges, the new events will incorporate a more advanced ROS2 control platform, LiDAR navigation modules, a six-axis robotic arm, and a

dual-camera AI sensing system. These elements simulate the "intelligent driving" and "mission operation" capabilities required of autonomous mobile robots in future cities.

Through hands-on practice and scenario-based task design, the competition aims to inspire students to develop core competencies in AI recognition, sensor integration, path planning, and motion control, while cultivating practical smart robotics talent capable of connecting industry–academia applications with international development.

II. Project Objectives

1. **Inspiring Learning Motivation and Expanding International Perspectives:** Through hands-on, task-oriented challenges and on-site international exchange activities, this competition encourages students to actively participate and engage in practical implementation. By observing the creative applications and technical integration strategies of teams from Taiwan and abroad, students are inspired to strengthen their learning motivation and broaden their international perspectives.
2. **Deepening Technical Practice and Strengthening System Integration:** The competition is designed to focus on the integrated application of the open ROS2 platform, combining image recognition, LiDAR navigation, and gripper control modules. It aims to cultivate students' system thinking and interdisciplinary practical skills in smart robot design, while connecting them with the latest developments in AI and smart manufacturing technologies

3. **Responding to Educational Needs and Supporting Academic Advancement:**
   The mission content aligns closely with competency-based curriculum objectives, covering modular abilities such as sensing and control, information and electronic applications, and electrical and mechanical systems. It can also support students' academic advancement needs, including special achievement-based admissions, recommendations to universities of science and technology, competition-based bonus points, and learning portfolios, offering strong educational extension value.

III. Advisory Organizations

Taoyuan City Government, Taoyuan City Council

IV. Organizer

Department of Economic Development, Taoyuan

V. Executive Organizer:

Shayangye Cultural & Educational Foundation

VI. Eligibility：

1. Currently enrolled students from public or private senior high schools, vocational high schools, colleges, and universities nationwide, including master's and doctoral programs
2. All contestants must hold valid student status recognized by the Ministry of Education.
3. International student teams of the same age group are welcome to participate. Proof of enrollment recognized by their respective countries must be submitted.

VII. Competition Event

Smart City Driving Training Challenge and AI Gripper Mission Challenge Competition

VIII. Competition Divisions：

1. **Senior High School and Vocational High School Division:** Open only to senior high school and vocational high school students. Each team may have a maximum of three members.
2. **College and University Division:** Open only to college and university students, including master’ s and doctoral students. Each team may have a maximum of three members.

IX. Event Information and Schedule Planning

1. **Registration Method:** Register through the official TIRT website:https://www.tirtpointsrace.org/
2. **Registration Period:** From May 20, 2026, to September 25, 2026. The organizer reserves the right to adjust the registration deadline based on actual circumstances.
3. **Competition Date:** Saturday, November 7, 2026.
4. **Competition Venue:** Taoyuan Arena, No. 1, Section 1, Sanmin Road, Taoyuan District, Taoyuan City.

X. Other Matters

1. The organizer reserves the final right of interpretation and announcement regarding any revisions to the competition guidelines, event content, and rules.
2. All latest announcements, mission icons, technical specifications, and Q&A information will be published on the official TIRT competition website.
3. For any inquiries, please contact the organizer at 03-3623452 ext. 5338, Mr. Chin, or dial 9 through the main switchboard for transfer.

2026 TIRT AI Autonomous Vehicle All-Round Challenge

II.Competition Guidelines

I. Eligibility

Contestants must hold valid student status recognized by the Ministry of Education. Participation is limited to students from senior high schools, vocational high schools, colleges, and universities, including master’s and doctoral programs. International teams must also submit valid proof of student status recognized by their respective countries. Each team may consist of a maximum of three contestants and must have one advisor responsible for registration and competition-related communication.

II. Competition Robot Specifications

The devices used in this competition are collectively referred to as gripper robots, hereinafter referred to as “robots,” and must comply with the following technical and design requirements:

1. **Operation and Control Method:**

   The robot must be capable of fully autonomous operation, and its power source shall be limited to electric power. During the competition, control via remote controller, Wi-Fi, Bluetooth, or remote computer is strictly prohibited.

2. **Wheel Configuration for Movement:**

   The robot’s mobile chassis must adopt a four-wheel configuration. All four wheels must be equipped with independent or controllable motor-driven capability and serve as the robot’s primary transmission and movement source. Omni-directional casters, idler wheels, auxiliary wheels, or wheel assemblies used only for support shall not replace the primary drive wheels.

Wheel types are not restricted. Teams may use standard wheels, mecanum wheels, or other wheel assemblies that comply with these specifications according to mission requirements.

3. **Definition of Front Direction:**

   During pre-competition inspection, each team must clearly indicate the front direction of the robot to the judges. The front direction refers to the primary forward-moving direction declared by the team and confirmed by the judges. It shall serve as the basis for determining the starting orientation, parking posture, reverse parking, parallel parking, and other robot orientation-related judgments throughout the competition. If the robot' s appearance does not clearly indicate its front direction, the judges may require the team to mark it using a label, arrow, chassis structure, or front axle position. Once the front direction is confirmed, it may not be changed arbitrarily during that round.

4. **Gripping Mechanism Design:**

   The robot must be equipped with at least one gripping mechanism capable of stably performing object gripping, transportation, and precise placement.

5. **Camera Sensing Configuration:**

   The robot must be equipped with at least one camera module, and the total number of camera modules shall not exceed three. The camera modules shall be used for object recognition, mission marker recognition, reversing, parking, and lane/path following.

6. **Environmental Sensing Requirements:**

   The robot must be equipped with at least one LiDAR sensor as a distance measurement and obstacle avoidance sensing component. The use of ultrasonic sensors, infrared sensors, ToF sensors, other types of distance measurement modules, or self-made substitute devices is strictly prohibited.

7. **Overall Size Limit:**

   The overall dimensions of the robot, including the robotic arm in its stowed position, must not exceed 30 cm in length, 30 cm in width, and 40 cm in height. Robots exceeding these dimensions will be deemed in violation of the rules and will not be allowed to compete.

8. **Operating Platform:**

   The robot must use ROS (Robot Operating System) as its development platform, supporting either ROS1 or ROS2. All navigation, recognition, control, and gripper algorithms must be integrated and operated within this platform architecture.

III. Competition Rules

1. **Starting Procedure and Mission Flow:**

   Each team’ s robot must start autonomously from the starting area and complete the Smart City Driving Training Mission and AI Gripper Mission Challenge according to the planned course layout. A total of eight missions must be completed before reaching the finish line. All missions must be completed autonomously by the robot, without the use of remote controllers or any external operational assistance.

2. **Mission Signboard Mode Selection:**

   The basic competition mission area provides two mission signboard modes: "Standard Recognition Mode" and "Challenge Recognition Mode." Teams must complete their mode selection during pre-competition inspection. Once selected, the mode may not be changed during that competition attempt. Signboards in Standard Recognition Mode include the mission number, mission icon, and AprilTag recognition pattern. Signboards in Challenge Recognition Mode include only the mission number and mission icon, without an AprilTag recognition pattern

3. **Time Limit and Number of Attempts:**

   Each team is given a maximum competition time of six minutes. During this period, the robot may make unlimited attempts, including restarting after a mission failure. The organizer reserves the right to adjust the challenge time and number of attempts depending on the number of participating teams.

4. **Abnormal Conditions and Restart Procedure:**

   If any of the following situations occur during a mission, the current attempt shall be deemed failed: incorrect mission recognition, failed gripping or object dropping, incorrect placement position, or incomplete mission execution. The robot may restart only after returning to the mission field.

5. **Scoring for Incomplete Missions:**

   If a robot fails to complete all missions within the time limit, the team's ranking shall be determined based on the actual score earned.

6. **Timing Mechanism and Error Handling:**

   Sensor-based timing devices are installed at both the starting point and finish line. To prevent timing errors caused by sensor abnormalities, judges will also conduct manual timing with a stopwatch as a backup record. If the automatic timing device fails, the time recorded by the judges shall prevail.

7. **Object Handling and Field Regulations:**

   During the competition, the robot must not leave any parts, markers, labels, or interfering objects on the field. All object gripping and placement actions must be fully completed and must not interfere with the competition progress of other teams.

8. **Route Compliance and Wall Restrictions:**

   The robot must complete the missions by following the designated course route. Damaging walls, crossing over walls to take shortcuts, bypassing the route, or altering the route without authorization is strictly prohibited. Violations will result in no score for the corresponding mission. In serious cases, the team may be disqualified.

9. **Environmental Variables and Rematch Regulations:**

   On-site environmental conditions, including lighting, humidity, floor height differences, reflections, and noise, are considered part of the competition environment. They may not be used as grounds for score abnormalities or appeals, nor shall they constitute a reason for a rematch.

10. **Judges' Authority and Dispute Handling:**

    During the competition, all disputes and matters not covered in the rules shall be subject to the final decision of the judges based on the on-site circumstances. Participating teams and advisors may not raise objections.

IV. Course Map and Prop Description

4.1 Competition Format

Participating robots must complete a total of eight challenge missions according to the mission layout of the field. Scoring is based on mission completion and total elapsed time. If teams have the same total score, rankings will be determined by completion time.

The competition missions are divided into two major sections: the Basic Round and the Advanced Round.

Basic Round Missions:

(1)Parallel Parking: The robot must simulate a parking maneuver and accurately park parallel within the white-line marked area.

(2)Reverse Parking: The robot must complete a reverse parking maneuver. The entire vehicle body must enter the designated parking space without touching the boundary.

(3)Curved Road: The robot must enter the S-shaped curve and stop before the stop line at the end. After stopping, the robot may either reverse along the S-shaped curve to exit, or make an in-place turn near the stop line and drive forward out of the curve.

(4)Traffic Light: The robot must recognize the traffic signal sign ahead. It must stop at a red light and proceed at a green light.

(5)Railroad Crossing: The robot must respond to a simulated railroad crossing signal. It must stop when the flashing light is on and proceed when there is no light.

(6)Pedestrian Crossing / Zebra Crossing: The robot must respond to a simulated pedestrian crossing scenario. It must stop when the flashing light is on and proceed when there is no light.

(7)Entering the City Entrance: After completing the driving training missions, the robot must correctly arrive at the entrance area of the Advanced Round.

Advanced Round Mission:

(8)City Transportation Mission: Four objects to be picked up are placed in the city area. These objects are mini bowling pins in four different colors, each placed at a designated location within the field. Corresponding placement baskets of matching colors are also set up in the field.

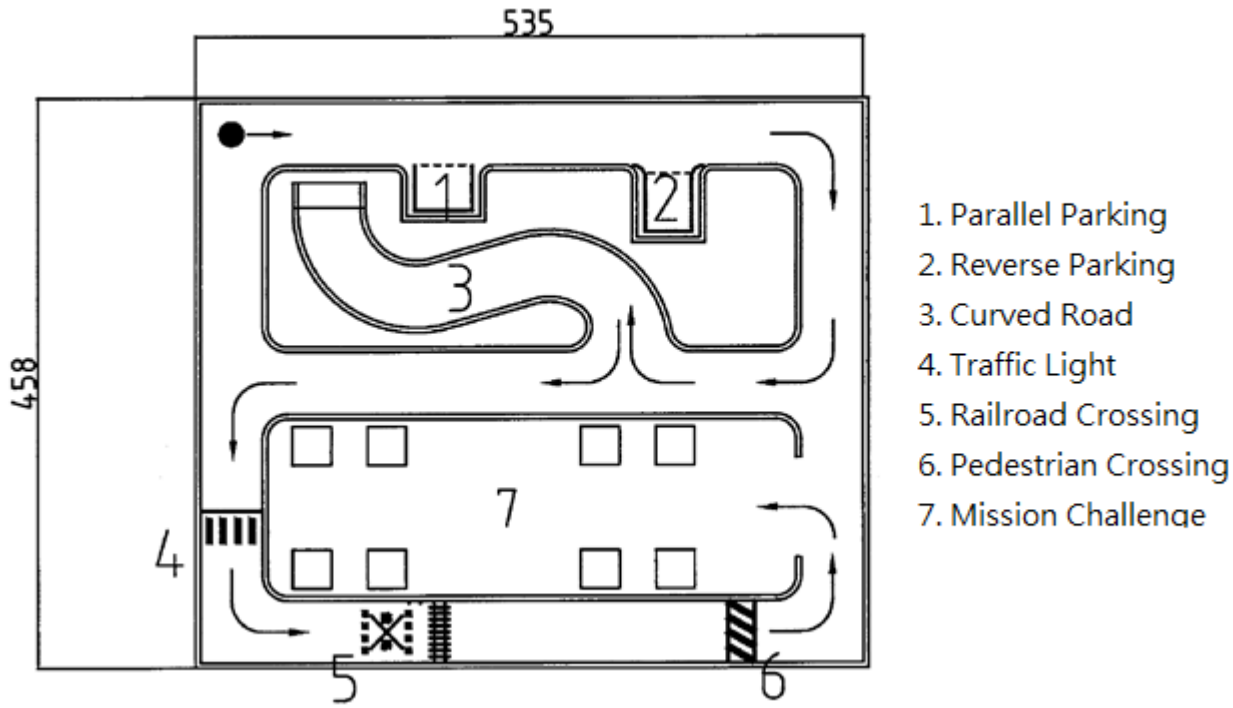
Teams may plan their own pickup sequence. After the robot enters the city area, it may select and pick up any mini bowling pin of any color according to its own strategy. The robot must place the picked-up mini bowling pin into the designated basket of the same color for that transportation process to be considered completed.

A total of four pickup objects are placed in the city area. Each team may perform a maximum of two rounds of transportation missions.

4.2 Competition Field and Simulated Map

1. **Overall Area and Field Design: The** total area of the competition course is 535 cm × 458 cm, simulating traffic environments and robotic operation scenarios in a smart city. The route integrates multiple scenarios, including straight roads, curved roads, intersections, pedestrian crossings, turns, and city transportation challenges, comprehensively testing the robot' s navigation, obstacle avoidance, visual recognition, and gripper operation capabilities under the ROS2 architecture.

Note: The actual map dimensions and scale shall be subject to the official announcement by the organizer.



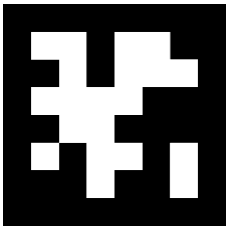
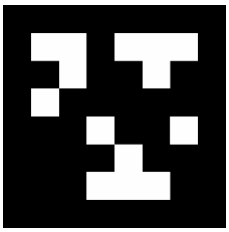
2. **Basic Round Mission Area:** This area is located in the first half of the course and simulates a smart driving training environment with various traffic scenarios. The robot must use camera modules to complete tasks such as reversing, turning, and road condition recognition.

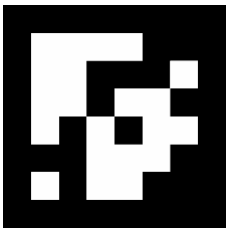
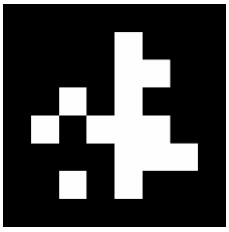
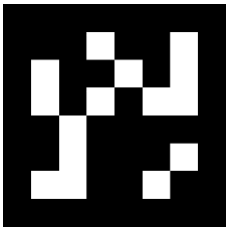
   The mission signboards in the Basic Round are divided into two modes:

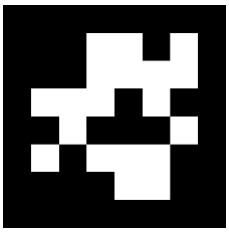
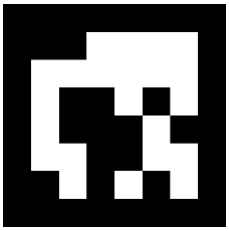
   (1) Standard Recognition Mode: The signboard includes the mission number, mission icon, and AprilTag.

   (2) Challenge Recognition Mode: The signboard includes only the mission number and mission icon, without an AprilTag.

   Participating teams must select one of the two modes before the competition, and the selected mode must be used consistently throughout all Basic Round missions.

<table>
<tr><th>Mission Item</th><th>Level Signage</th><th>AprilTag</th><th>Mission Icon</th></tr>
<tr><td rowspan="2">Parallel Parking</td><td>  </td><td>  </td><td>  </td></tr>
<tr><td>Mission Description</td><td colspan="2">Complete the parallel parking mission.</td></tr>
<tr><td rowspan="2">Reverse Parking</td><td>  </td><td>  </td><td>  </td></tr>
<tr><td>Mission Description</td><td colspan="2">Complete the reverse parking mission and park accurately.</td></tr>
</table>

Curved Road			
	Mission Description	Complete the curved road mission.	
Traffic Light			
	Mission Description	Complete the traffic signal judgment mission. When the red light is on, the robot must stop. When the green light turns on, the robot may continue moving.	
Railroad Crossing			
	Mission Description	Complete the railroad crossing judgment mission. When the two red lights are flashing, the robot must stop. When the lights are no longer flashing, the robot may continue moving.	

Pedestrian Crossing/Zebra Crossing			
	Mission Description	Complete the pedestrian crossing judgment mission. When the two yellow lights are flashing, the robot must stop. When the lights are no longer flashing, the robot may continue moving.	
Entering the City Entrance			
	Mission Description	Complete the mission of entering the city starting area.	

Note: The AprilTag recognition patterns shown in the table apply only to Standard Recognition Mode. Challenge Recognition Mode does not provide these recognition patterns.

Advanced Round Mission Area: Located in the second half of the course, this area requires the robot to autonomously perform AI recognition and gripper operations.

City Transportation Mission	No Signage	Pickup Object / Placement Target Area
	Mission Description	After entering the city area, the robot must autonomously pick up a mini bowling pin, navigate through the city, and place it in the placement area of the corresponding color.

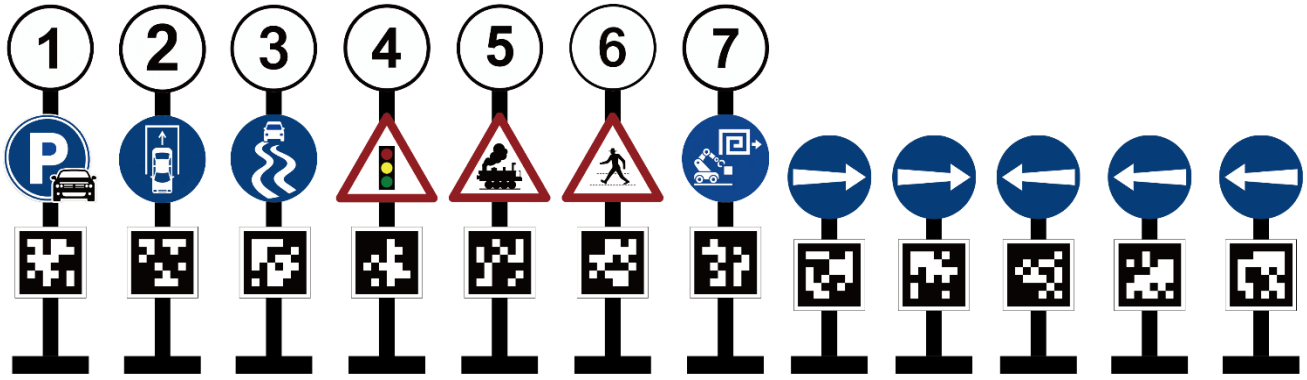
3. **Mission Signage and Sensing Design:** Clearly visible mission signboards are placed in the Basic Round mission area for the robot to recognize and trigger the corresponding mission modules.

In these rules, "mission signage" refers to the complete sign object placed beside each mission level, including the level number, mission icon, and an optional robot recognition pattern. The Basic Round mission signage is numbered from 1 to 7.

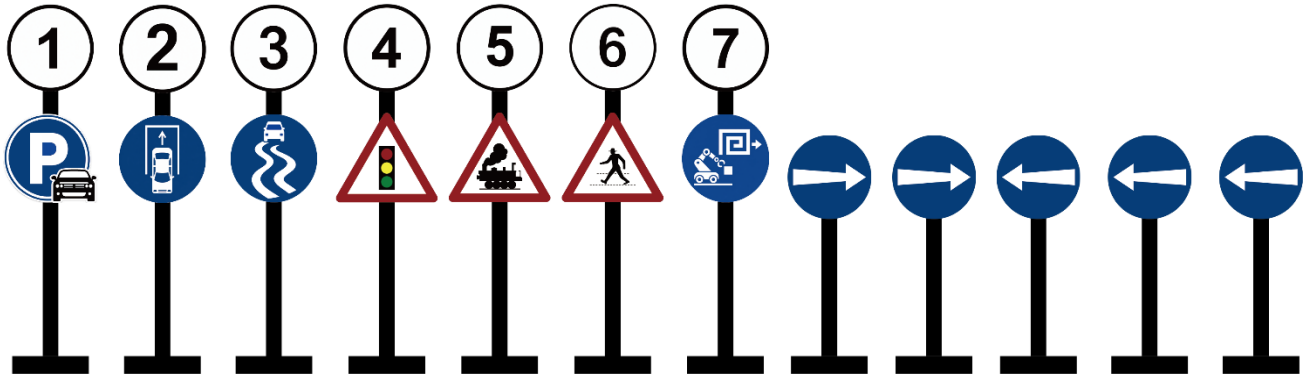
Participating teams must select either Standard Recognition Mode or Challenge Recognition Mode before the competition. Signboards in Standard Recognition Mode include the level number, mission icon, and robot recognition pattern. Signboards in Challenge Recognition Mode include only the level number and mission icon.

No signage is placed in the Advanced Round city area. After entering the city, the robot must rely on its own sensors, camera recognition, path planning, and control program to autonomously complete object recognition, gripping, and placement tasks in the corresponding color area.

4. **Mission Map and Map Data Provision:** One week before the competition, the organizer will provide an electronic simulated map and mission node descriptions for participating teams to conduct simulation training, path planning, and programming. The map will include markings such as mission area locations, direction indicators, stop lines, and travel routes.



Example of Signboard Design in Standard Recognition Mode



Example of Signboard Design in Challenge Recognition Mode

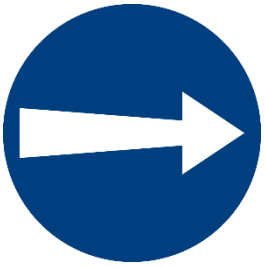
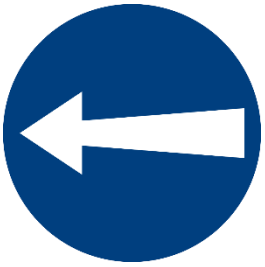
5. **Concept of Basic Round Sign Recognition and Advanced Round**

Autonomous Recognition Flow: As the robot moves within the mission map data, it will encounter road sections that require it to go straight, turn left, or turn right. The robot shall use its camera to determine the direction of movement.

The mission control flow is as follows:

Camera scans the corresponding sign → determines the mission type → executes the corresponding mission module program → completes the action → determines whether to restart or proceed to the next mission.

The following is a summary of the recognition and behavior flow for each mission:

			
Straight Only	Right Turn Only	Left Turn Only	Left or Right Turn Only

(1) Parallel Parking:

→ The robot camera scans the sign.

→ The robot determines that the mission type is parallel parking.

→ The robot executes the corresponding internal mission module program.

→ The robot parks completely within the designated stop line area, remains stationary for at least 5 seconds, then returns to the main route and proceeds to the next mission level.

(2) Reverse Parking

→ The robot camera scans the sign.

→ The robot determines that the mission type is reverse parking.

→ The robot executes the corresponding internal mission module program.

→ The robot parks completely within the designated stop line area, remains stationary for at least 5 seconds, then returns to the main route and proceeds to the next mission level.

(3) Curved Road

→ The robot camera scans the sign.

→ The robot determines that the mission type is curved road.

→ The robot executes the corresponding internal mission module program.

→ The robot must drive into the stop area at the end of the S-shaped curve and remain stationary for at least 5 seconds. After stopping, the robot may either reverse completely along the S-shaped curve to exit, or make an in-place turn near the stop line and drive forward out of the curve. After completing the mission, the robot returns to the main route and proceeds to the next mission level.

(4) Traffic Light

→ The robot camera scans the sign.

→ The robot determines that the mission type is traffic signal awareness: traffic light.

→ The robot executes the corresponding internal mission module program.

→ When the camera detects a red light, the robot must stop before the stop line. The robot may proceed across the stop line and move on to the next mission level only after detecting a green light.

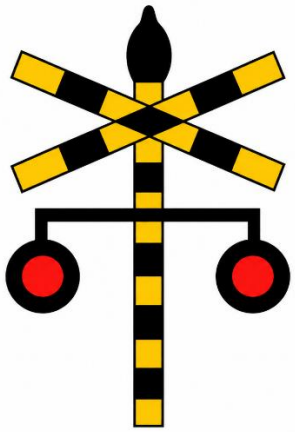
(5) Railroad Crossing

→ The robot camera scans the sign.

→ The robot determines that the mission type is railroad crossing.

→ The robot executes the corresponding internal mission module program.

→ When the camera detects flashing red lights, the robot must stop before the stop line. The robot may proceed across the stop line and move on to the next mission level only after determining that the lights have stopped flashing.



(6) Pedestrian Crossing / Zebra Crossing:

→ The robot camera scans the sign.

→ The robot determines that the mission type is pedestrian crossing / zebra crossing.

→ The robot executes the corresponding internal mission module program.

→ When the camera detects flashing yellow lights, the robot must stop before the stop line. The robot may proceed across the stop line and move on to the next mission level only after determining that the lights have stopped flashing.

(7) Entering the City Entrance:

→ The robot camera scans the sign.

→ The robot determines that the Basic Round missions have been completed and that it is entering the Advanced Round mission area.

→ The robot executes the corresponding internal mission module program.

→ The robot turns into the city entrance and proceeds to the next mission level.

(8) City Transportation Mission:

→ No mission signage is placed in the city area.

→ After entering the city area, the robot must use its camera to recognize the mini bowling pins placed within the field and select any pickup object according to its own strategy.

→ After activating the gripper to pick up a mini bowling pin, the robot must travel through the city and transport the object to the placement basket of the corresponding color.

→ Each team may perform a maximum of two rounds of transportation missions. The score for each round shall refer to the scoring table below.

→ If the object is placed in a basket of the wrong color, dropped and not successfully placed, fails to reach the placement area, or is not successfully picked up, that transportation round shall be deemed incomplete.

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III.Detailed Scoring Criteria

I. Overview of the Scoring System

- Participating robots must complete seven Basic Round missions and the Advanced Round City Transportation Mission according to the mission layout of the field.
- This competition adopts a "mission completion score and penalty deduction system." Completion scores are awarded for each level based on mission completion status. If situations such as reattempts, going out of bounds, collisions, incorrect recognition, or other conditions that do not fully comply with the rules occur during the process, points will be deducted according to the corresponding penalty standards.
- The final score for each level is calculated as follows:

  Level Score =

  Full Completion Score for the Level +

  Penalties for the Level (negative points)

  Total Field Score =

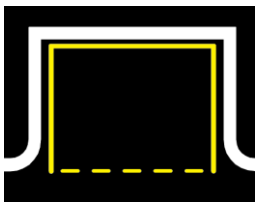
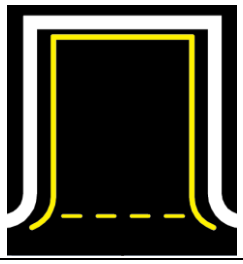
  Sum of All Level Scores +

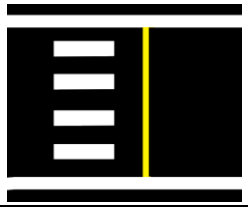
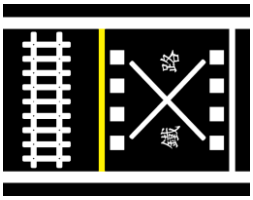
  Common Field Penalties (negative points) +

  Challenge Recognition Mode Bonus Points

- The minimum score for each level is 0 points and shall not be negative. The maximum score shall not exceed the full completion score of that level. If the mission of a level is not completed, no completion score shall be awarded for that level, and the level shall be scored as 0 points.
- Common field penalties will be deducted separately from the total score. The minimum total field score is 0 points.
- The full basic score for the entire field is 100 points. If a team meets the bonus requirements for Challenge Recognition Mode, up to 14 bonus points may be awarded. The maximum final total score is 114 points.
- Scoring is based on the total field score and total elapsed time. If teams have the same total field score, the team with the shorter total elapsed time will rank higher. If the total elapsed time is still the same, the team that selected Challenge Recognition Mode will rank higher.

II. Basic Round Mission Scoring Rules

Item	Standard Performance	Failed or Not Executed
1.Parallel Parking	The entire vehicle enters the parking space, parks parallel and properly aligned, and remains stationary within the stop area for at least 5 seconds. The standard parking space line is indicated by the yellow line in the figure below. 	The robot does not perform the parking action or deviates beyond the allowed distance.
2.Reverse Parking	The robot correctly reverses into the parking space and remains stationary within the stop area for at least 5 seconds. The standard parking space line is indicated by the yellow line in the figure below. 	The robot does not perform the parking action or deviates beyond the allowed distance.

3. Curved Road	The robot drives to the stop area at the end of the S-shaped curve, comes to a complete stop, remains stationary within the stop area for at least 5 seconds, and then fully exits the S-shaped curve without any wheels crossing the boundary line.	The robot does not perform the mission, severely deviates from the route, or is unable to enter or exit the S-shaped curve area.
4. Traffic Light	The robot correctly interprets the light signal and stops before the stop line when the red light is on. The stop line is indicated by the yellow line in the figure below. 	The robot misinterprets the light signal or fails to stop.
5.Railroad Crossing	The robot fully stops in response to the light signal and stops before the stop line when the red lights are flashing. The stop line is indicated by the yellow line in the figure below. 	The robot fails to stop.

6.Pedestrian Crossing/Zebra Crossing	The robot fully stops in response to the light signal and stops before the stop line when the yellow lights are flashing. The stop line is indicated by the yellow line in the figure below. 	The robot fails to stop.
7. Entering the City Entrance	The robot successfully enters the city entrance without colliding with the field walls. |	The robot fails to pass through the city entrance.

III. Advanced Round Mission Scoring Criteria

Item	Standard Performance	Failed or Not Executed
8. City Transportation Mission	The robot picks up a mini bowling pin, travels through the city, and places it into the basket of the corresponding color. Two rounds may be performed. The second round may begin only after the first round has been completed.	The robot fails to pick up the object, fails to reach the placement area, places the object into a basket of the wrong color, or drops the object and fails to complete the placement.

IV. Bonus and Penalty Criteria

Item	Description	Bonus / Penalty Points
Parallel Parking (15 points)	Complete the mission successfully	+15
	Stopping time does not meet the required duration	-1
	The vehicle body is not completely parked within the designated area	No score for this level
	One or more wheels cross outside the parking space during parking	No score for this level
	The front direction of the vehicle clearly does not match the mission travel direction, or the vehicle is clearly parked diagonally, sideways, or in the opposite direction within the parking space	No score for this level
Reverse Parking (15 points)	Complete the mission successfully	+15
	Stopping time does not meet the required duration	-1
	The vehicle body is not completely parked within the designated area	No score for this level
	One or more wheels cross outside the parking space during parking	No score for this level
	The robot does not enter the parking space by reversing, the front direction of the vehicle clearly does not match the entrance direction of the parking space, or the vehicle is clearly parked diagonally or sideways within the parking space	No score for this level

Curved Road (20 points)	(a) Complete the mission successfully and exit the S-shaped curve by reversing	+20 (choose either a or b)
	(b) Complete the mission successfully and exit the S-shaped curve by a method other than reversing	+10 (choose either a or b)
	Stopping time does not meet the required duration	-1
	The robot does not reach the stop area at the end of the S-shaped curve	No score for this level
	The robot does not fully exit the S-shaped curve area	No score for this level
Traffic Light (5 points)	Complete the mission successfully	+5
	When the red light is on, any wheel touches the stop line but does not completely cross it	-1 per occurrence
	When the red light is on, the robot crosses the stop line and passes through	No score for this level
Railroad Crossing (5 points)	Complete the mission successfully	+5
	When the lights are flashing, any wheel touches the stop line but does not completely cross it	-1 per occurrence
	When the lights are flashing, the robot crosses the stop line and passes through	No score for this level

Pedestrian Crossing (5 points)	Complete the mission successfully	+5
	When the lights are flashing, any wheel touches the stop line but does not completely cross it	-1 per occurrence
	When the lights are flashing, the robot crosses the stop line and passes through	No score for this level
Entering the City Entrance (5 points)	Complete the mission successfully	+5
	The robot does not enter the city entrance area	No score for this level
City Transportation Mission (30 points)	Successfully pick up the object and place it in the corresponding color placement area in the first round	+10
	Successfully pick up the object and place it in the corresponding color placement area in the second round. The second round may begin only after the first round has been completed.	+20
	The pickup object is placed in the wrong color placement area	No score for that transportation round
	The pickup object is not successfully picked up	No score for that transportation round
	The pickup object is not successfully placed in the designated area	No score for that transportation round

Field-Wide Penalties	During the process, one or more wheels go outside the course boundary	-2 per occurrence
	Reattempt	-1 per occurrence
	Damage to the field or props	-20 per occurrence; in serious cases, the team may be disqualified
Additional Bonus Points	Challenge Recognition Mode	+2 for each fully completed Basic Round mission level, up to a maximum of 14 points

※Bonus points for Challenge Recognition Mode are calculated only for Basic Round missions. The Advanced Round City Transportation Mission is not included in the Challenge Recognition Mode bonus calculation.

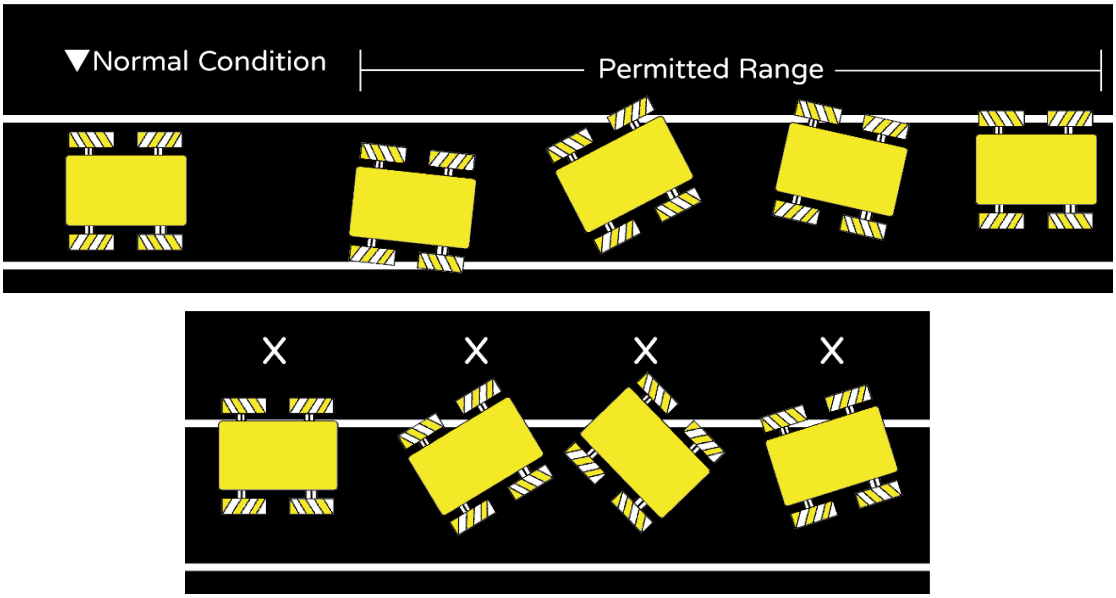
V. Out-of-Bounds Determination

In these rules, "out of bounds" or "outside the course boundary" refers to the situation in which any one wheel of the robot fully crosses beyond the outer white boundary line of the course. If a wheel only touches the line but does not cross beyond the outer white boundary line, it is not considered out of bounds. If any one wheel crosses beyond the outer white boundary line, it shall be counted as one out-of-bounds occurrence.

Out-of-bounds determination is calculated by each individual occurrence. Each time an out-of-bounds occurrence happens, points will be deducted according to

the corresponding penalty standards for that level or the field-wide common penalty criteria.

The relevant determination examples are shown in the figure below.



VI. Reward Mechanism：

Ranking	Bonus (NTD)	Certificate
1st Prize	$12,000	V
2nd Prize	$8,000	V
3rd Prize	$5,000	V
Excellent Work	-	V