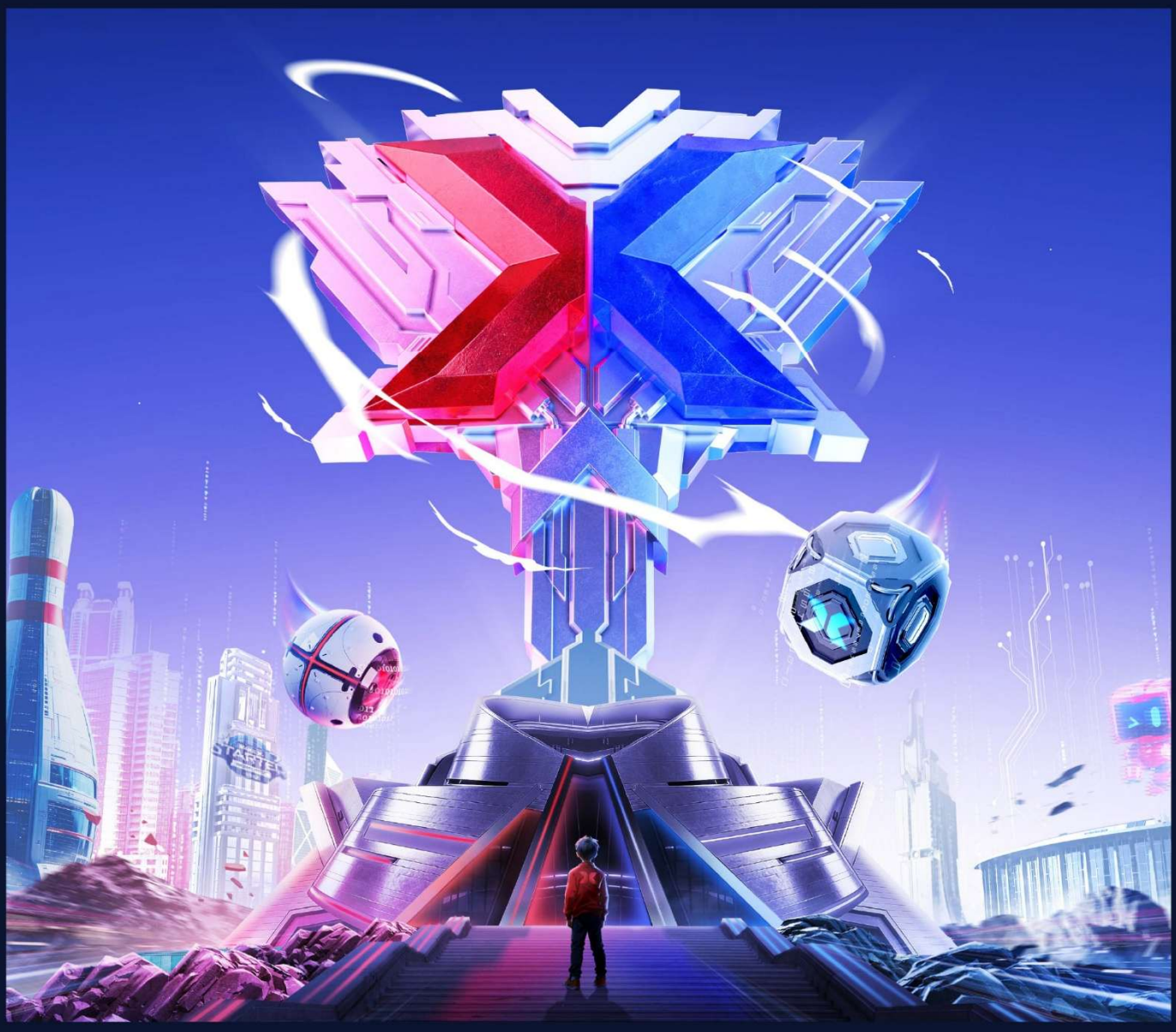
2026

V1.0

MAKEX

ROBOTICS COMPETITION



RULES GUIDE

MakeX Explorer

Creativity · Teamwork · Fun · Sharing

Date	Version	Modifications Record
2025.11	1.0	MakeX Explorer Strategy Front Rules Guide First Publish.

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1.Introduction

1.1 About MakeX

MakeX is an international robotics competition platform for young people around the world. Originating from China, it is centered on STEAM and engages youth through various forms such as robotics competitions, STEAM carnivals, innovation showcases, and international exchange events. These activities allow participants to experience the joy of creation in practice and inspire their passion for technology.

The MakeX Robotics Competition upholds the spirit of Creativity, Teamwork, Fun, and Sharing, combining challenge and enjoyment. It encourages young people to embrace Science (S), Technology (T), Engineering (E), Arts (A), and Mathematics (M), and to apply this knowledge to real-life situations — exploring boldly and solving problems with creativity and teamwork.

1.2 MakeX Spirit

Creativity: we advocate curiousness and innovation, encouraging all contestants to create unique high-tech works with their talent, and challenge themselves for continuous progress!

Teamwork: we advocate solidarity and friendship, encouraging all contestants to develop a sense of responsibility and enterprising spirit, and sincerely working with their partners for win-win development!

Fun: we encourage contestants to build a positive, healthy mindset in the competition. Enjoy the journey and grow in the process.

Sharing: we encourage contestants to have an open mind as a maker and share their knowledge, responsibility, and joy with everyone, including their teammates and competitors.

MakeX spirit is the cultural cornerstone of the MakeX Robotics Competition. We

hope to provide a platform for all contestants, mentors and industry experts to exchange ideas, study and grow up, and help young people acquire new skills during creation, learn to respect others in teamwork, gain an enjoyable life experience in the competition, take delight in sharing with the society their knowledge and responsibility, and work hard to achieve their grand aspiration of changing the world and creating the future !

1.3 About MakeX Explorer

MakeX Explorer is a confrontational competition program for elementary and junior high school students aged 8-15.

This program fully integrates the essence of sports events and is highly interesting and a delight to watch. The competition requires the contestants to design and build robots from scratch, which systematically develops the contestants' comprehensive abilities in robot design, mechanical construction, and programming. Also, the form of alliance confrontation improves the contestants' ability to solve imperative problems and develop strategic thinking.

2. Competition Application

2.1 Participation Requirements

Participants: Contestants shall participate in teams, the number of contestants is 2-4 for each team, with 1-2 mentor(s).

Age: Team members must be between the age of 8-15 (born between January 2, 2010 and December 31, 2018). The mentor must be at least 18 years old.

Team Roles: Everyone in the team can play their respective roles as operator, observer, mechanist, programmer and so on. In each match, one team can only appoint 1 operator and 1 observer to participate, only two team members are allowed to compete in the competing area. The operator is responsible for operating the robot, and the observer is responsible for assisting the operator in observing the status of props and making suggestions.

Identification Symbols: Each team must have a team logo, team name, and team slogan. Teams are encouraged to use uniforms, flags, posters, badges, base decorations, etc. to show the team culture.

2.2 Registration and Application

Contestants and mentors who meet participation requirements can register on the designated competition web page on the MakeX official website (www.makex.cc/en). Each team should register with one registration form.

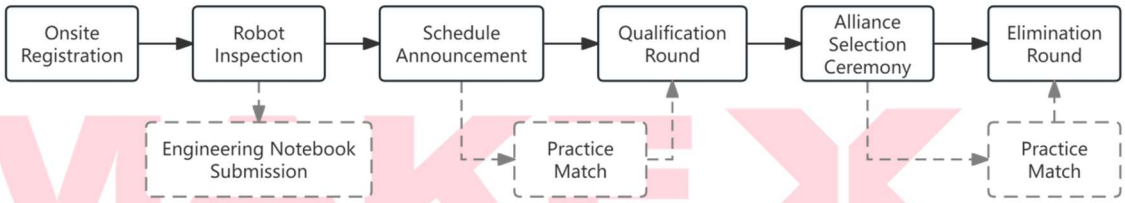
If the participating team wants to change their members before the competition, which leads to inconsistency with the registration information, they should inform the MakeX Robotics Competition Committee in advance to finish re-registration.

For more details about the registration and application, please refer to MakeX Registration & Competition Application Guide

3.Competition Procedure

Participating teams shall pay close attention to related notices and the Competition Guide published before each competition. If the rules have some updates in the competition guide, the latest rules will be adopted for the competition. MakeX Competition Committee reserves the rights and final interpretation to amend competition rules and systems based on the actual situation of different competitions.

The schedule for each competition is determined by the actual situation and generally includes the following procedures.



* Note: The solid line frame refers to the necessary procedure of each match, while the dotted line frame refers to the non-essential procedure. Please keep abreast of updates.

Onsite Registration

When a team arrives at the venue, mentors and contestants should show ID cards or other valid certificates (e.g., passport) for onsite registration and to get the competition pack. Mentors must inform team members about the fire exit, match schedule, arena, pits area, etc. Onsite registration and robot inspection will be closed once the match schedule is announced.

Robot Inspection

Teams are required to check their robots and team markers before the competition and complete the "**Appendix 3: Robot Self-Inspection Form**" according to the actual data. Teams are required to check their robot against the Self-Inspection items to make sure it meets the requirements associated with robot construction. During the

robot inspection time, the inspectors will randomly check the robot and team markers against the completed Robot Self-Inspection Form. Teams that do not provide the completed Robot Self-Inspection Form will not be accepted for inspection; For teams that provide complete inspection materials, the inspector will stick the inspection sticker of the match to the robot, and the inspection sticker can not be removed after sticking, if there is any special reason that causes the inspection sticker to be broken, please take the initiative to communicate with the organizing committee and explain the reason.

Before the official match, participating teams are obligated to conduct self-inspections on their robots and mutual inspections on the opposing robots, and make necessary corrections promptly before entering the arena.

Once in the arena, malicious complaints are not allowed (for the definition of malicious complaints, please refer to section 6.2 Operational Rules - R29). Teams must follow the referee's instructions and raise their hands to confirm that both robots are correct before the match begins. After this point, unless filing a complaint, no further on-site inspections of the robots are allowed.

Schedule Announcement

The committee will announce the match schedule at least 30 minutes ahead of the competition through the online official website and onsite announcement. The schedule includes a match-up chart, match session and specific time, red alliance and blue alliance, etc. If the two matches are too closed, please sign up at the Result Approval Area.

Engineering Notebook Submission

Each team is required to submit 1 paper copy of their team’s engineering notebook to the MakeX staff. If you are unable to submit the original version, please prepare your own copy. The engineering notebook will be used as an important basis for the selection of the special awards, teams that do not submit engineering notebooks are by default excluded from engineering notebook-related awards. The paper version of the engineering notes will not be returned after submission. For suggestions on how

to write the engineering notes, please refer to "**Appendix 2: Engineering notebook guideline**". Not all competitions will include engineering notebook-related award selection. Please refer to the content of the Competition Guide distributed before the competition for the awards.

Practice Round

Teams who have finished their robot inspection can participate in the practice round. The schedule will be announced at the entrance in the form of notices, and teams are required to queue in line before entrance. Not all competitions have a practice round, which can be informed based on the actual situation.

Waiting for the match

During the regular competition, the venue will be equipped with a waiting area and Make staff will announce or post the number of waiting matches in the pits area. Participating teams should pay attention to the notification of waiting matches and go to the corresponding waiting area according to the notified waiting matches.

Qualification Round

Normally, each team is requested to participate in four matches during the qualification round. However, the session of the qualification round may be different based on different competitions. In the qualification round, the red alliance and blue alliance are matched randomly. Points will be obtained by teams according to the winning or losing result. It is conducted in the form of alliance confrontation and each team's alliance and the opponents will be allocated randomly.

In each qualification round, all teams will receive corresponding points (including win, tie, and loss) regardless of competition type. Three points for a win, one point for a tie, and no point for a loss. The final ranking is based on the sum of win-loss points of all qualification rounds, and the top-ranking teams will be promoted to the Elimination round.

If the teams with the same win-loss points, the ranking sequence will be determined according to the following rules:

1) The team with a higher total points differential of all qualification rounds has a higher ranking.

2) If the above conditions are the same, the team with higher total scores among all qualification rounds has a higher ranking.

3) If the above conditions are the same, the team with the highest score of a single round in all qualification rounds has a higher ranking.

4) If the above conditions are the same, teams with the same ranking will play a one-on-one extra match, and those with the highest total points will be the winner.

Alliance Selection Ceremony

In the alliance selection ceremony, promoted teams will select their alliance team in turn according to their ranking in the qualification round. Alliances that are generated after the ceremony will be the alliances for the elimination round. The alliances will be named “Alliance 1”, “Alliance 2”, Alliance 3” ..... and so on according to the generated sequence. During this procedure, teams must abide by the following rules (For point races only, other levels of competition are subject to pre-match announcements):

Teams ranked in the top 50% have the right of refusal once, the first time the team is chosen, the team can refuse, the right of refusal will automatically expire after using it once, teams ranked in the bottom 50% have no right of refusal when they are chosen, and when refused by the chosen team, the team can continue to choose their next alliance teammate until the alliance is formed.

The promoted teams who are not present before the start of alliance selection are deemed as voluntarily giving up the right to choose an alliance, and those who are not present until the end of the alliance selection are considered to be as voluntarily quitting the elimination round. If the promoted teams quit amid the alliance selection ceremony, the promotion places will be given to the following teams according to the ranking in the qualification round.

During the alliance selection ceremony, each team representative will have 30

seconds to make their decision when it is their turn, and if they are not selected within the 30-second time limit, they will lose the right to select and will move on to the next team in order.

The promotion proportion for the 2026 season competition is as follows. However, the promotion quota in different competitions may be different according to the actual situation.

Number of participating teams	Number of promoted teams
97 and more	64
49-96	32
25-48	16
12-24	8

Elimination Round

During the elimination round, the alliances generated in the alliance selection ceremony will be the opponent (red alliance and blue alliance are automatically matched) according to the competition schedule. The winner will be evaluated by BO3(Best of 3) and the alliance that achieves "two wins" or "one win and two ties" can advance to the next round until the champion, runner-up and second runner-up are elected.

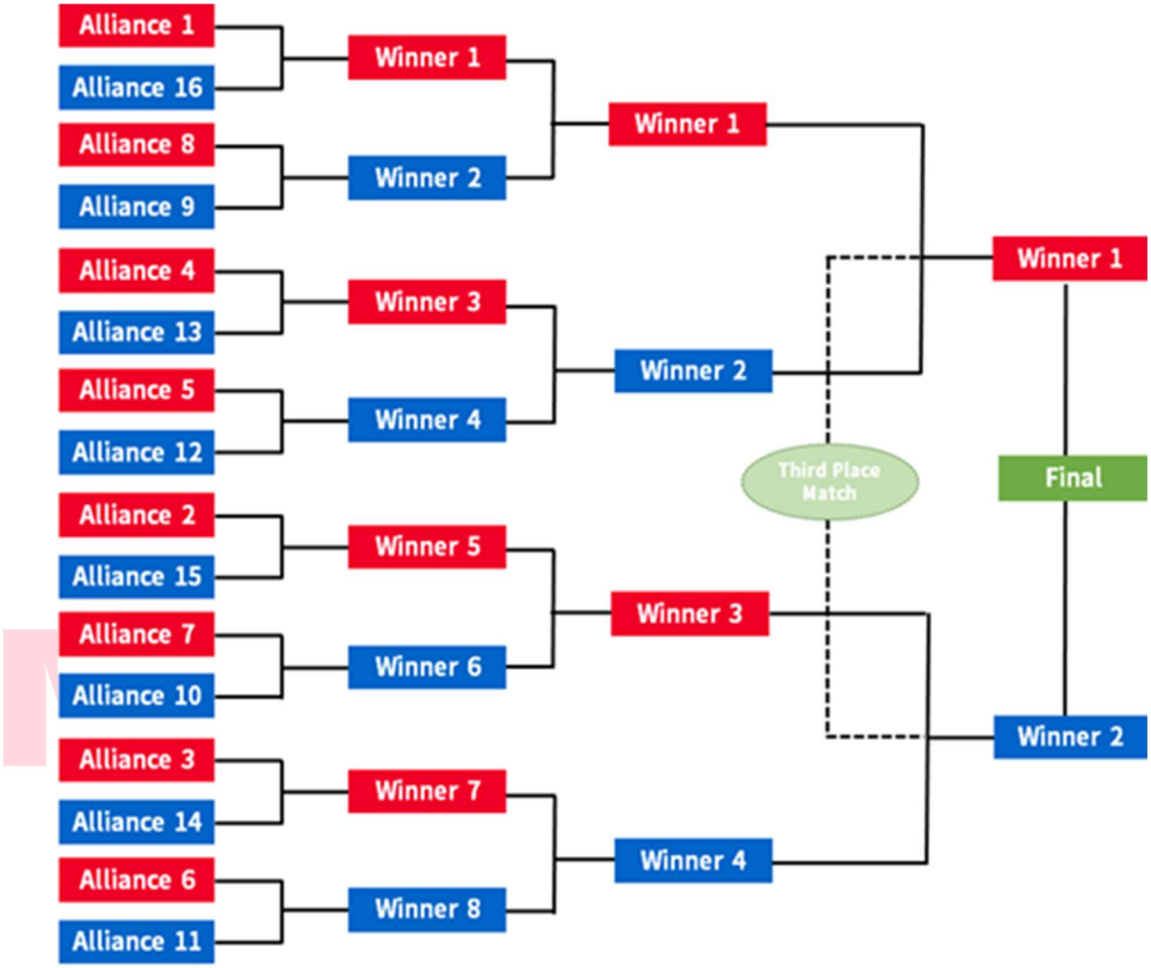
If the two alliances achieve "1 win, 1 loss, 1 tie" or "3 ties" in a BO3, the winning alliance will be decided according to the following rules:

1) If win-loss points are the same, the alliance with a higher total point differential in BO3 has a higher ranking.

2) If the above conditions are the same, the alliance with the highest scores in BO3 has a higher ranking.

3) If the above conditions are the same, alliances will play an extra match until the winner is elected.

Taking the promoted 32 teams as an example, the schedule of the elimination round is as follows:



4.Competition Details

The theme of the 2026 Season MakeX Explorer is “Strategy Front”.

As an emerging economic model driven by humanity’s exploration and utilization of space resources, the space economy is developing at an unprecedented pace. Breakthroughs in artificial intelligence (AI) are providing a core driving force for the large-scale expansion of the space economy and for extending the boundaries of human survival. Meanwhile, the global landscape of space activities is increasingly characterized by a complex mix of multidimensional competition and cooperation.

In this new confrontational challenge, participants must navigate an open cosmic map and limited orbital and spectrum resources. By completing identity verification and authorization to launch remote-sensing satellites into space, teams strive to secure advantageous positions in the competition for spectrum resources. Establishing effective and secure communication defense barriers is crucial for shaping the order of the interstellar internet.

4.1 Introduction

MakeX Explorer is a confrontational competition, among which red and blue alliances for each match, and two teams for each alliance.

Each match comprises an automatic stage and a manual stage. Teams are required to control the robot to finish missions automatically or manually. At the end of the competition, the referee will calculate all of the mission points for both teams, and the alliance with the higher score will be the winner.

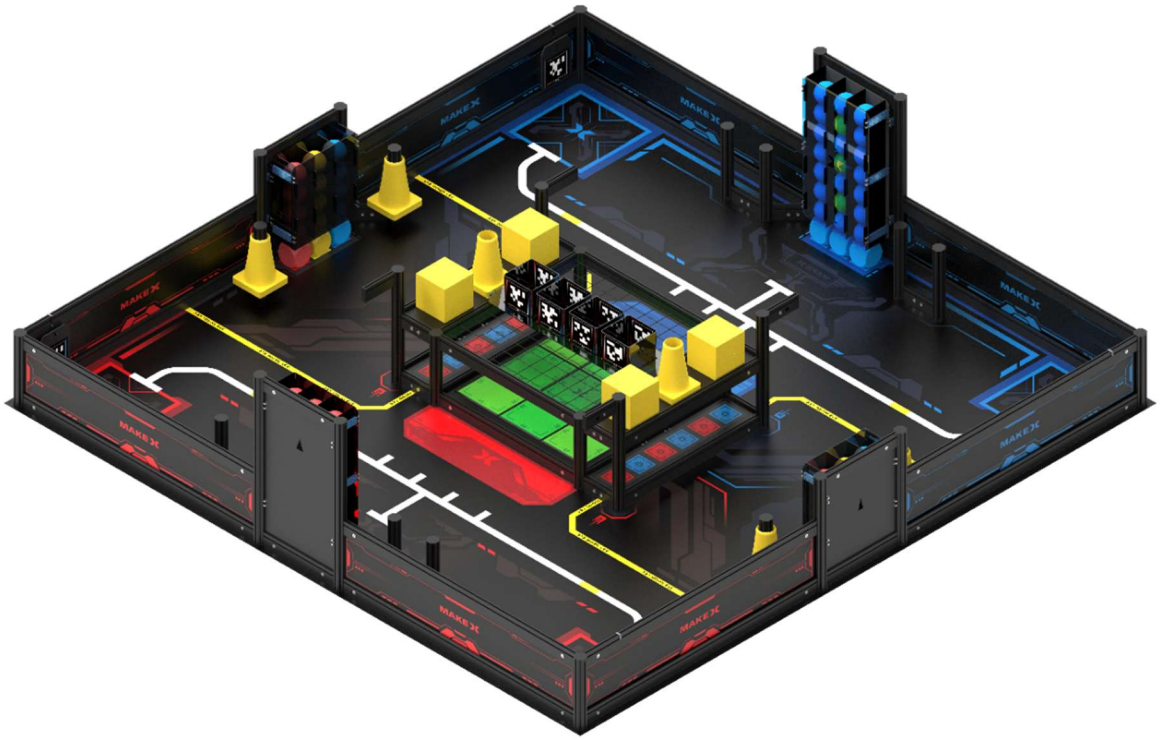


Fig 4.1-1 Axonometric View of the Arena

4.2 Arena

The arena of MakeX Explorer is composed of a map and frame. The arena is rectangular with a size of 2400 mm*2400 mm, and is composed of two half-field maps, each measuring 2400 mm*1200 mm. The arena mainly consists of the Starting Area, Own Resource Area, Own Defense Area, as well as several public areas, which consist of the following: Public Satellite Resource Area, Satellite Strategy High Ground (Central Green Area), Core Satellite Access Area (Central Recognition Area), Barrier Interference Area, and Flag Hanging Area.

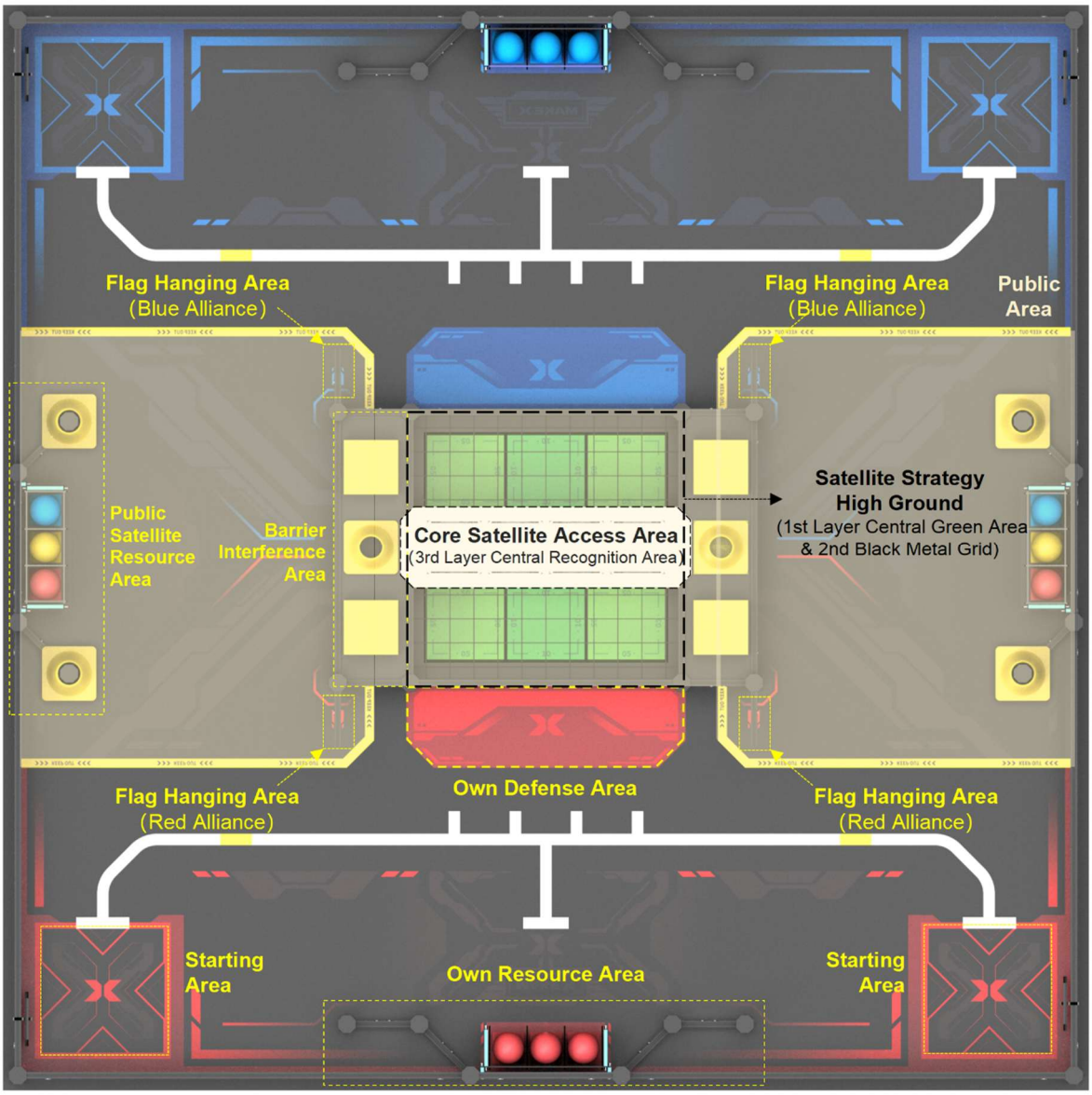


Fig 4.2-1 Areas on the Competition Arena

The competition arena is divided into red camp, blue camp and central area. Robots are only allowed to finish corresponding missions in individual camps.

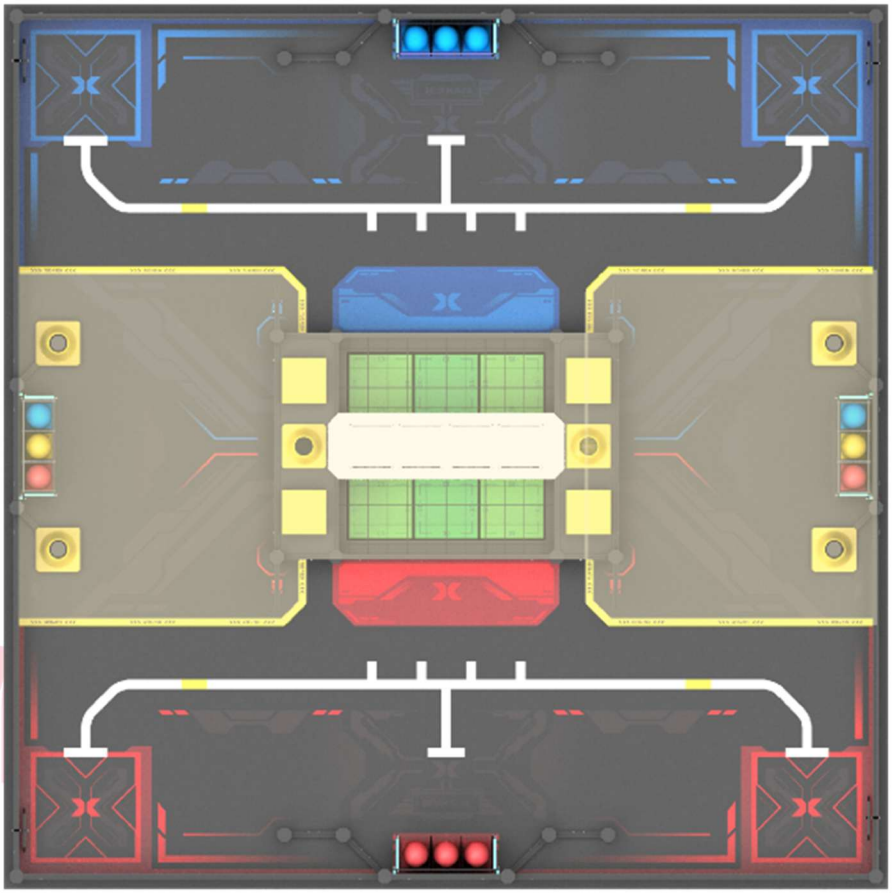


Fig 4.2-2 Top View of Arena

Starting Area

With the size of 320mm * 320mm, the starting area, located at the four corners of the arena, is where robots are placed before the competition. There are two starting areas for the red alliance and the blue alliance.

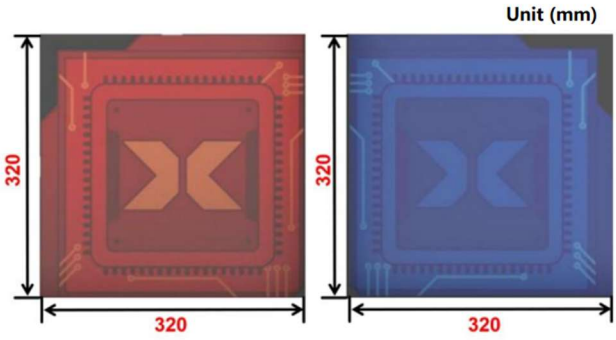


Fig 4.2-3 The Starting Area

Own resource area

Own resource areas are located on the respective camp of the arena. There are one own resource areas for each of the red and blue camps, making a total of two resource areas on the field.

Each Own Resource Area consists of two parts: A three-column Alliance Magazine, composed of red/blue transparent acrylic panels and a border frame, and a Rocket Launch Pad (Cone Hanging Area).

Each alliance (Red and Blue) has one Alliance Magazine, which stores three types of satellite resources: Benefit Satellite (Yellow Ball), High-Score Satellite (Red Ball / Blue Ball), and Low-Score Satellite (Red Cube / Blue Cube).

At the initial setup, as shown in the field diagram: each Own Resource Area contains,

18 balls in the alliance's own color, 3 cubes in the alliance's own color, and 3 yellow balls (Benefit Satellites).

Each alliance (Red and Blue) also has one Rocket Launch Pad, also referred to as the Cone Hanging Area, which is constructed using four 120 mm flat aluminum rods and four 250 mm octagonal pillars. The Cone Hanging Rods touch the field surface and are positioned at the rear of each alliance area, on both sides of the Own Resource Area.

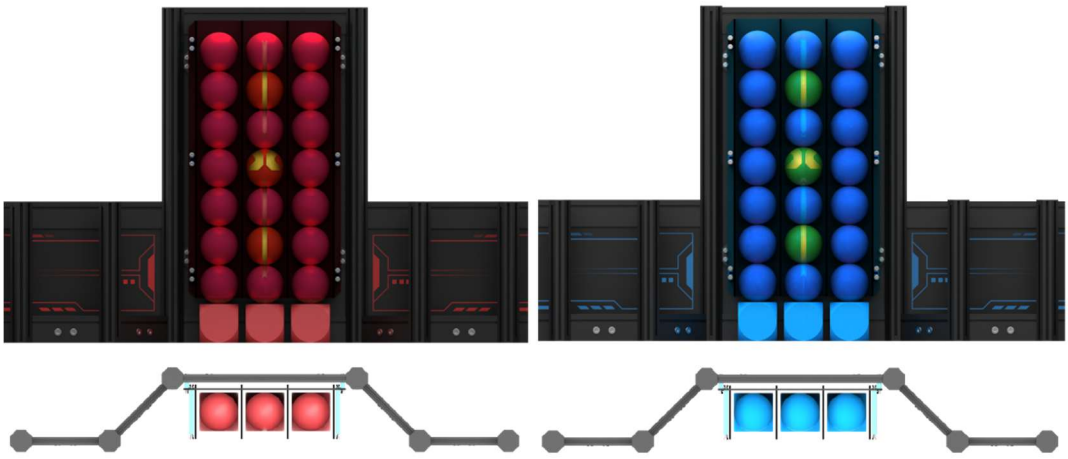


Fig 4.2-4 The own resource area

Own Defense Area

The Own Defense Area is located within each alliance's territory, adjacent to the Central Green Area (Satellite Strategy High Ground), and is marked by a hexagonal region containing the "X" symbol. Both the Red Alliance and the Blue Alliance have one Own Defense Area, making a total of two defense areas on the field.

Fig 4.2-5 Own Defense Area

Public Area

There is only one Public Area on the entire field. The Public Area consists of the following five areas: Public Satellite Resource Area, Satellite Strategy High Ground (Central Green Zone), Core Satellite Access Area (Central Recognition Zone), Barrier Interference Area, and Flag Hanging Area.

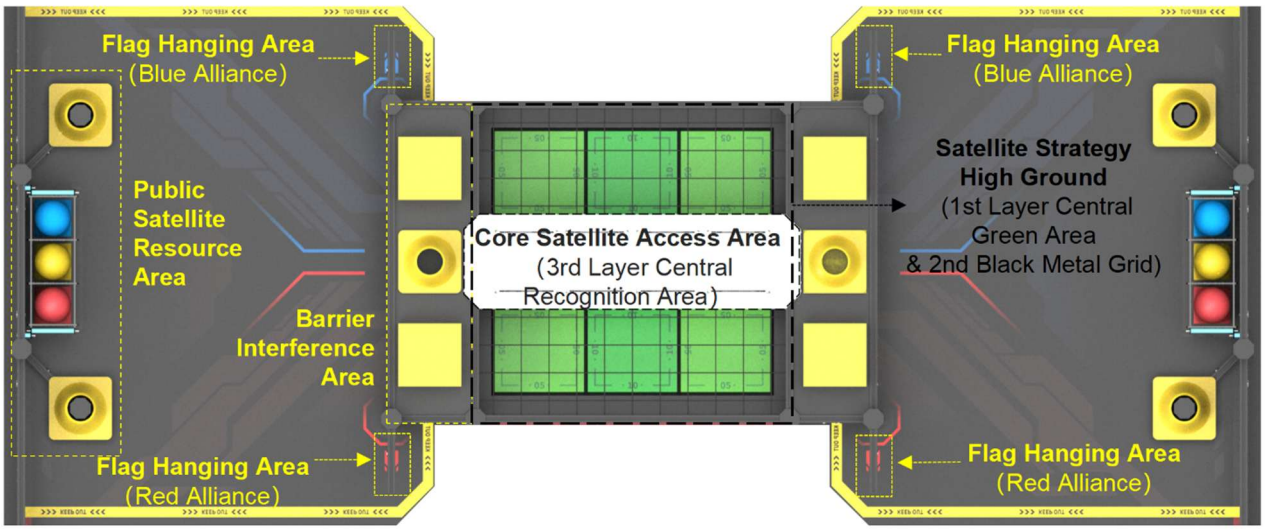
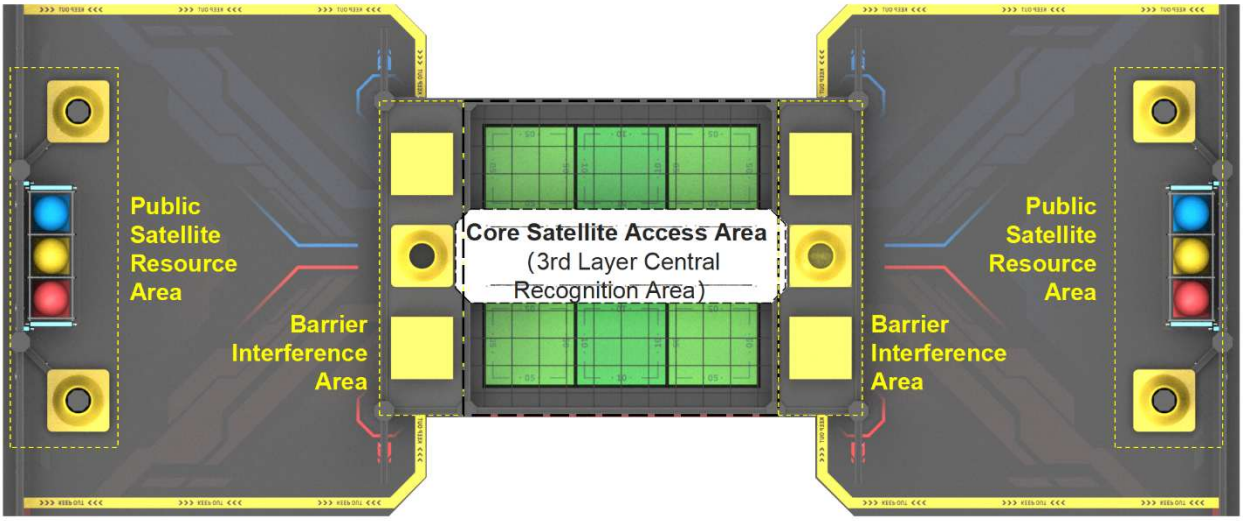


Fig 4.2-6 Public Area

The **Public Satellite Resource Area** is located within the Public Area, near the left and right field borders. There are two Public Satellite Resource Areas in total — one on each side of the field.

Each Public Satellite Resource Area contains six types of satellite resources and two Rocket Carrier Device resources.

Specifically, each area includes: 4 Red Alliance High-Score Satellites (Red Balls), 4 Benefit Satellites (Yellow Balls), 4 Blue Alliance High-Score Satellites (Blue Balls), 1 Red Alliance Low-Score Satellite (Red Cube), 1 Public Welfare Emergency Satellite (Yellow Small Cube), 1 Blue Alliance Low-Score Satellite (Blue Cube), and 2 Rocket Carrier Devices (Yellow Cones).



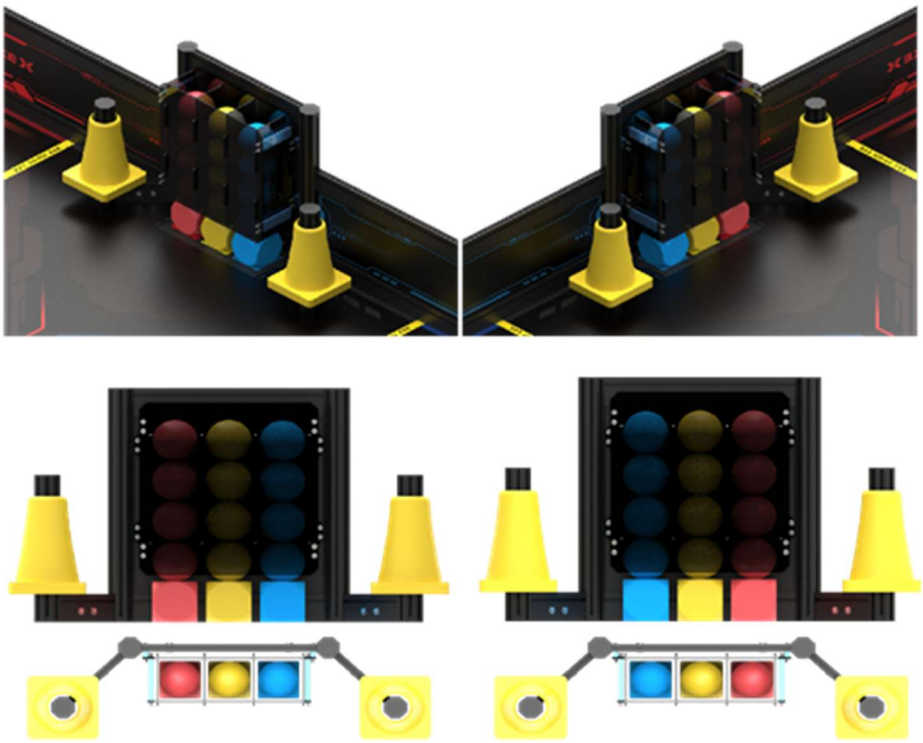


Fig 4.2-7 Public Satellite Resource Area

The **Satellite Strategy High Ground** is located at the center of the competition field.

It consists of two layers: the first layer, which is the Central Green Area, designed as a nine-square grid (green map area); and the second layer, which is a black metal grid positioned above it.

The green base layer of the Central Green Area is divided into nine square areas,

each assigned with different point values. The black metal grid is installed above the green area, forming the upper structure of the high ground.

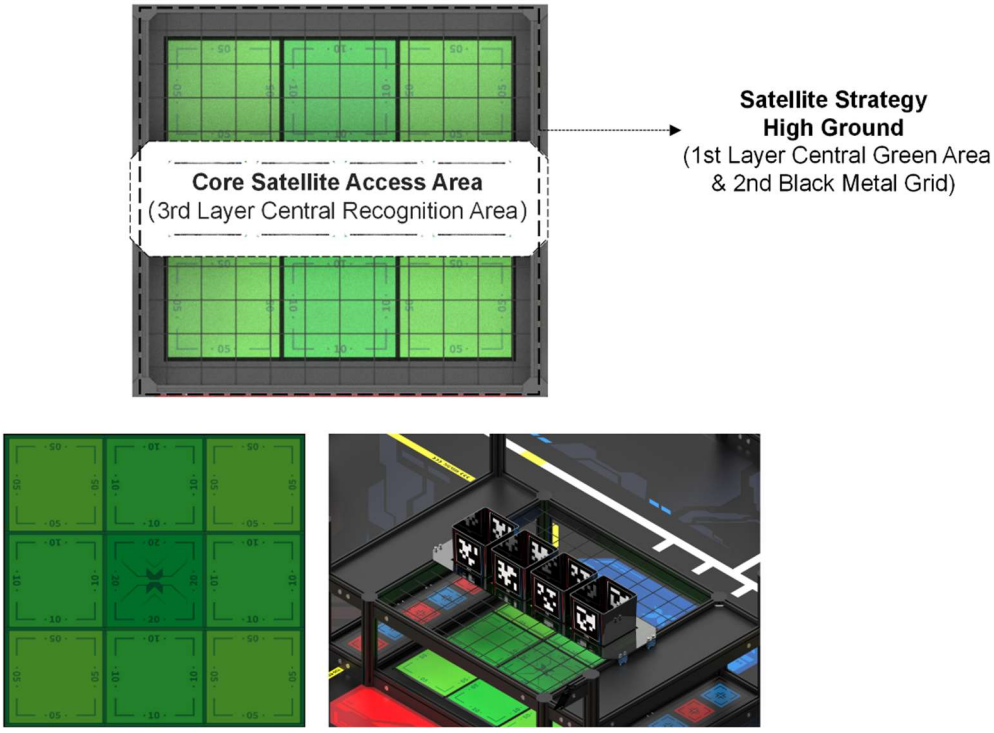


Fig 4.2-8 Central Basket Satellite Strategy High Ground (Central Green Area)

The **Core Satellite Access Area**, also known as the Central Recognition Area, is located on the third layer, directly above the metal grid of the Satellite Strategy High Ground. This structure is composed of one octagonal transparent acrylic base plate and four transparent acrylic boxes.

On the sides of the boxes facing each alliance's field, QR code labels are attached for visual recognition. On the side facing the Red Alliance area, the QR codes from left to right are labeled: "ZERO," "ONE," "TWO," and "THREE." On the side facing the Blue Alliance area, the QR codes from left to right are labeled: "THREE," "TWO," "ONE," and "ZERO." Each acrylic box represents one unique identification code, serving as a visual marker for robot recognition.

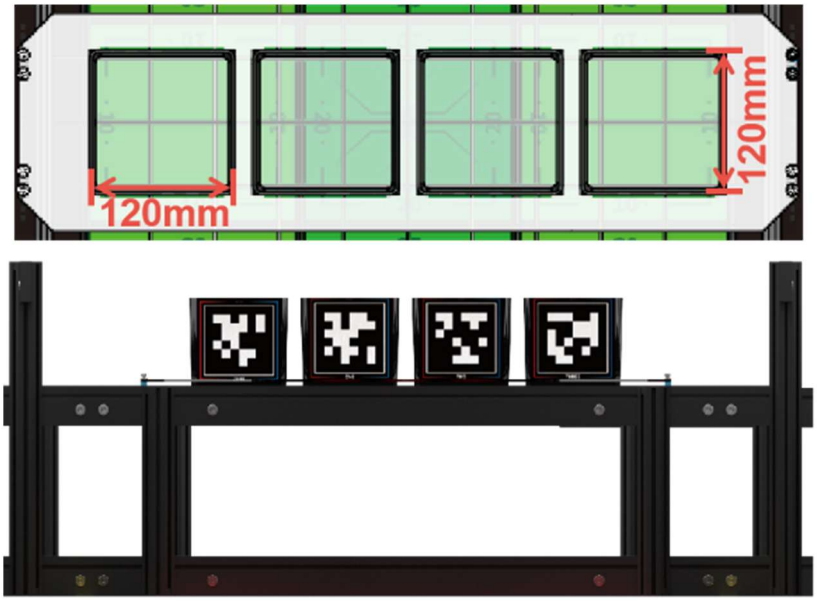
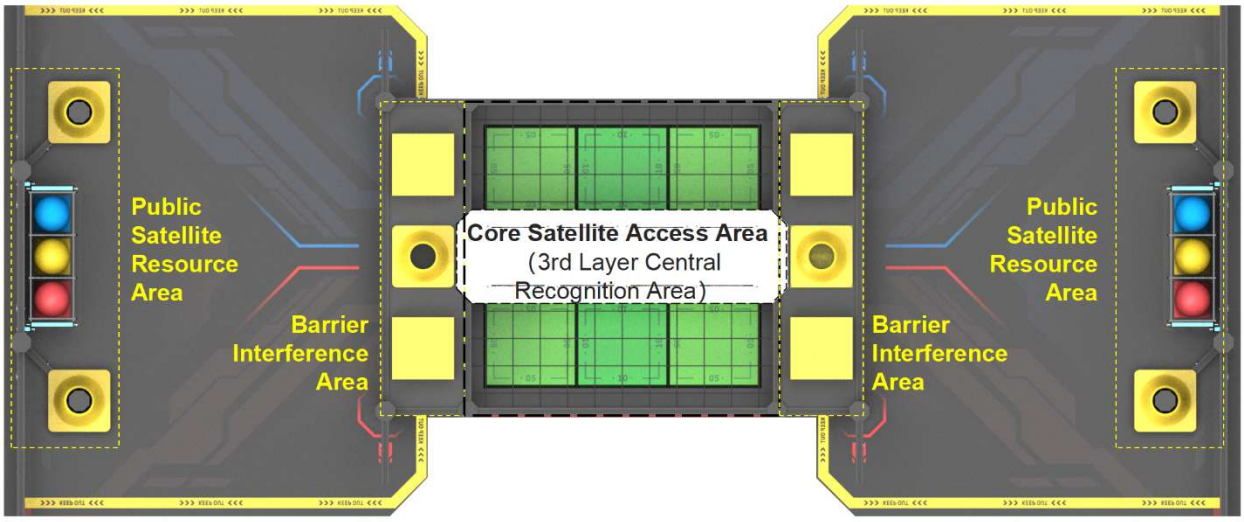


Fig 4.2-9 Core Satellite Access Area (Central Recognition Area)

The **Barrier Interference Area** is located on both the left and right sides of the Satellite Strategy High Ground, with a total of two Barrier Interference Areas on the field.

Each Barrier Interference Area is composed of two levels: The upper level contains two Firewalls (Yellow Large Cubes) and one Rocket Carrier Device (Yellow Cone). The lower level serves as the Red/Blue Cube Placement Area, which does not contain any resources in the initial setup.



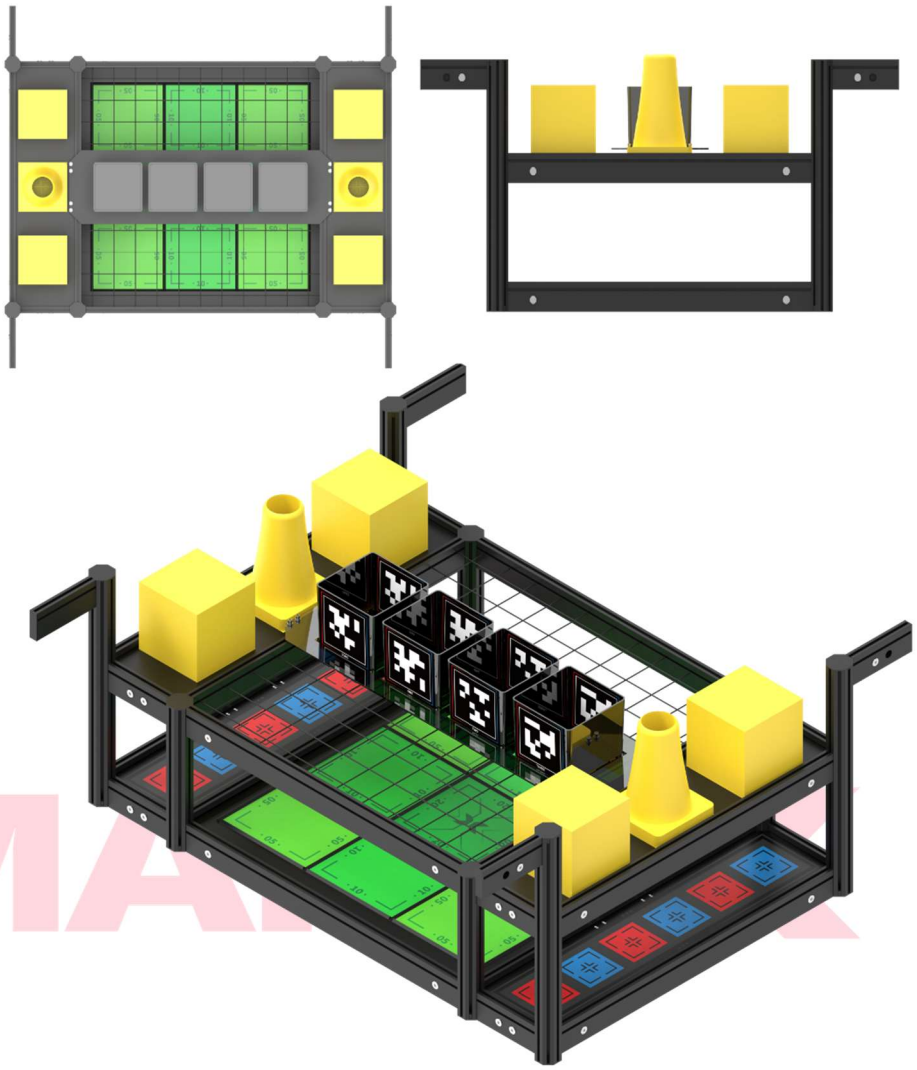


Fig 4.2-10 Barrier Interference Area

Flag hanging area

At the top corners of the second level of each Barrier Interference Area, there are two symmetrical Flag Hanging Devices mounted on the vertices of the octagonal pillars.

The Flag Hanging Pole are positioned perpendicular to the field, pointing toward the respective alliance's area — resulting in two Flag Hanging Areas for the Red Alliance and two for the Blue Alliance, for a total of four Flag Hanging Areas on the entire field.

Note: Each Flag Hanging Rod is a horizontal flat aluminum bar measuring 120 mm in length. This flat aluminum bar is specifically used for hanging the team flag.

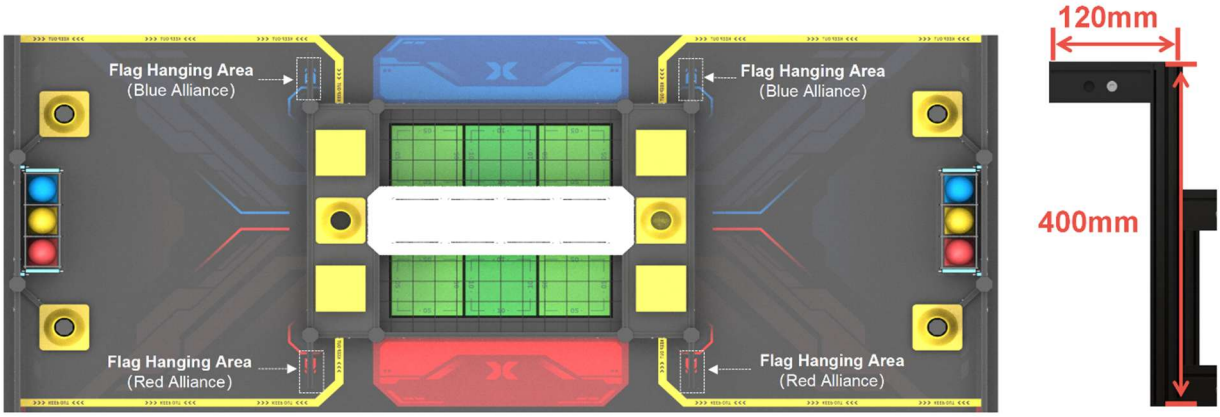


Fig 4.2-11 Flag Hanging Area

4.3 Props

QR Code Tag Board

The QR Code Tag Board is a black double-sided acrylic plate with QR code labels attached on both sides. Each board is made of matte black acrylic and equipped with two matte QR code label stickers. At the initial setup, the boards are hung on the side hooks of the four Starting Area barriers. The exact hook position may be adjusted by each team as needed. Each hook holds two double-sided QR Code Tag Boards.

Material: Black matte double-sided acrylic with matte QR code stickers

Shape and Size: Hexagonal, 3 mm thick, 120 mm base

Quantity: A total of 8 tag boards are used on the field (two on each Starting Area side hook)

Each Starting Area has two tag boards: The first board is labeled “ZERO” on one side and “ONE” on the other. The second board is labeled “TWO” on one side and “THREE” on the other.

During the pre-match draw phase (20 seconds), each team’s participants hold the QR

boards by hand.

After the alliance representative completes the draw and determines the task code for the match, the participants must manually hang the corresponding QR Code Tag Board onto the inward-facing hook at the side of their Starting Area, so that the robot can recognize the QR code when it starts the autonomous program.

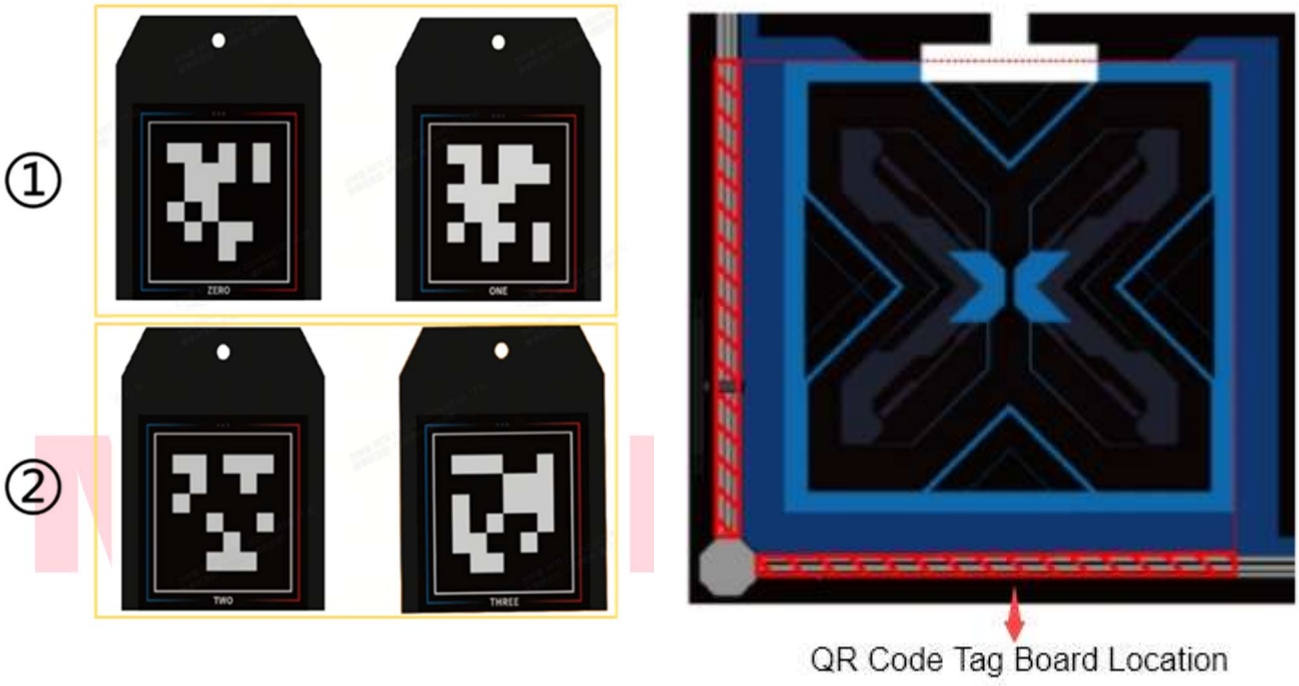


Fig 4.3-1 QR Code Tag Board and Location

High-Score Satellites (Red & Blue Balls)

The High-Score Satellites refer to the red and blue balls on the field. Their initial placement is located in both the Own Resource Areas and the Public Satellite Resource Areas.

Material: EVA

Size: Diameter of 70 mm (both red and blue balls)

Quantity: A total of 56 balls are used on the field — 28 red and 28 blue.

Distribution details:

Each Own Resource Area contains 18 balls of the alliance's color.

Each Public Satellite Resource Area contains 8 balls of each alliance color.

Before the match begins, each robot holds one alliance-colored ownership ball. The alliance-colored ownership ball must be completely within the robot's starting area, with no more than one ball allowed in each starting area. Teams may choose whether or not to carry the ball on the robot.

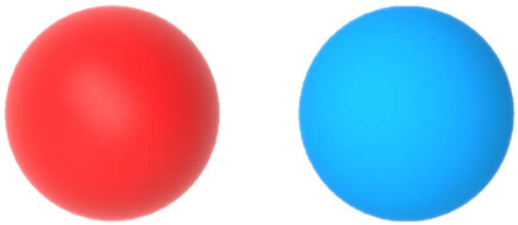


Fig 4.3-2 High-Score Satellites (Red & Blue Balls)

Low-Score Satellites (Red & Blue Cube)

The Low-Score Satellites refer to the red and blue cubes on the field. Their initial placement is in the Own Resource Areas, the Public Satellite Resource Areas, and the Barrier Interference Areas.

Material: EVA

Size: Each cube measures 70 mm on each side

Quantity: A total of 10 cubes are used on the field — 5 red and 5 blue.

Distribution details:

Each Own Resource Area contains 3 cubes of the alliance's color.

Each Public Satellite Resource Area contains 2 cubes of each alliance color

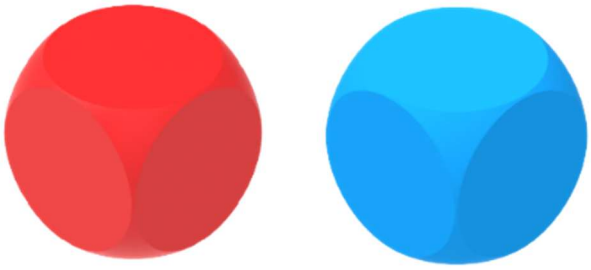


Fig 4.3-3 Low-Score Satellites (Red & Blue Cube)

Benefit Satellite (Yellow Ball)

The Benefit Satellites refer to the yellow balls on the field. Their initial placement is in both the Own Resource Areas and the Public Satellite Resource Areas.

Material: EVA

Size: Diameter of 70 mm

Quantity: A total of 14 yellow balls are used on the field.

Each Own Resource Area contains 3 yellow balls.

The Public Satellite Resource Areas contain 8 yellow balls in total.

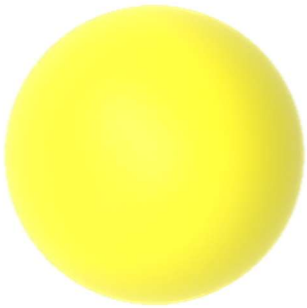


Fig 4.3-5 Benefit Satellites (Yellow Ball)

Public Welfare Emergency Satellite (Yellow Small Cube)

The Public Welfare Emergency Satellites refer to the yellow small cubes on the field. Their initial placement is in the Public Satellite Resource Areas.

Material: EVA

Size: Edge length of 70 mm

Quantity: A total of 2 yellow small cubes are used on the field.

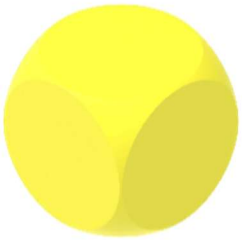


Figure 4.3-6 Public Welfare Emergency Satellites (Yellow Small Cube)

Firewall (Yellow Large Cube)

The Firewalls refer to the yellow large cubes on the field. Their initial placement is on the upper layer of the Barrier Interference Areas.

Material: EVA

Size: Edge length of 120 mm

Quantity: A total of 4 yellow large cubes are used on the field.

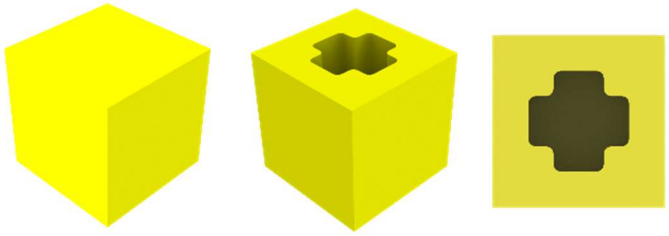


Figure 4.3-6 Firewall (Yellow Large Cube)

Rocket Carrier Device (Yellow Cone)

The Rocket Carrier Devices refer to the yellow cones on the field. Their initial placement is in the Public Satellite Resource Areas and the second level of the Barrier Interference Areas.

Material: EVA

Size: Base dimensions 120 mm*120 mm*20 mm; overall height 170 mm

Quantity: A total of 6 cones are used on the field. 4 cones are hung in the Public Satellite Resource Areas. 2 cones are placed on the upper layer of the Barrier Interference Areas.

At the beginning of the match, no cones are placed in the Cone Hanging Area of either alliance's Own Resource Area.

Figure 4.3-7 Rocket Carrier Device (Yellow Cone)

Protective Flag (Self-made Prop)

The Protective Flag, also referred to as the Team Flag, is a self-made prop designed and produced by each team.

Each team is allowed to use only one flag during the competition.

After the Automatic Stage ends and before the Manual Stage begins, the team must manually hang the flag on the hook located on the border panel of its own field area.

The flag must consist of two parts: the flag surface and the hanging component.

Its structure must follow the standard flag shape — irregularly shaped flags are not allowed, as shown in Figure 4.3-8.

Flag Surface Requirements:

- The flag surface must be made of flexible material, such as fabric, paper, or other soft materials.
- The flag must be rectangular and intact, with no cutouts or irregular trimming.
- The length of each side of the flag must be no less than 120 mm.
- The flag must clearly display the team's official name.
- The team's name must match the registered name of the participating team.
- Flags displaying or referencing other teams' names are not permitted.

Suspension Component Requirements:

If a flagpole is used, it must be made of rigid material, and its length must match the width of the flag's hanging edge.

- The cross-sectional size of the flagpole must be smaller than 10 mm*10 mm.
- The hanging component must not include irregular flagpoles or additional counterweights.
- Any flag structure that does not meet these requirements will be considered noncompliant and classified as an invalid scoring prop.

The organizing committee encourages teams to decorate their flags with creative and positive designs or text that reflect team spirit and competition values.

However, the flag must not contain any words, logos, or images related to the MakeX Robotics Competition Organizing Committee.

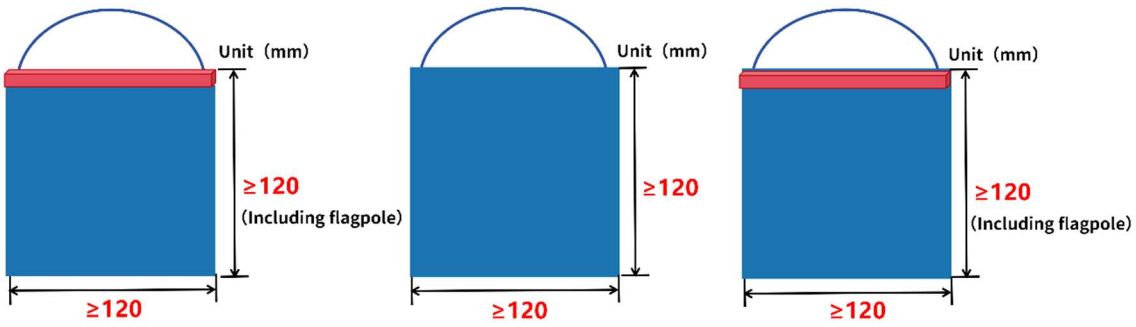


Fig 4.3-8 Protective Flag

* Note: All areas and props have certain tolerances. If there are any objections to the size of the props or other problems, the referee can determine whether to change them according to the actual situation.

4.4 Missions Introduction and Scoring State Judgement

The competition spans 4 minutes, comprising an automatic stage (30 seconds) and a manual stage (3 minutes 30 seconds). Each stage includes specific missions, detailed below. Contestants will be alerted to the commencement and conclusion of each stage by the referee's countdown. For a comprehensive understanding of the sequence of events, please refer to "**4.6 Single Match Flow**".

Stage and Time	Missions	Mission Details
Automatic Stage (30 seconds)	Identify High-Score Satellites (Red/Blue Balls)	Run the automatic program to visually recognize the high-score satellite of the alliance's color and place the initial alliance-colored ball into the designated Central Recognition Area (QR code box) based on the draw number. This determines the ownership of the yellow ball (Benefit Satellite) scores for the entire match.
	Launch High-Score and Benefit Satellites (Red/Blue/Yellow Balls)	Run the automatic program to collect red or blue balls from the own field area and public area, and launch them into the first layer (Central Green Area), second layer (Black Metal Grid), or third layer (Central Recognition Area). Run the automatic program to collect yellow balls and launch them into the second layer (Black Metal Grid), or third layer (Central Recognition Area).
	Deploy Low-Score	Run the automatic program to collect

	Satellites (Red/Blue Cubes)	alliance-colored cubes from the own field area and public area, and place them into the corresponding color cube area on the lower level of the Barrier Interference Area.
	Retrieve Rocket Carrier Devices (Cones)	Run the automatic program to remove yellow cones from the Rocket Hanging Rods in the Public Area or from the upper layer of the Barrier Interference Area, and hang them onto the Cone Hanging Area in the Own Resource Area.
	Install Satellite Firewalls (Yellow Large/ Yellow Small Cube)	Run the automatic program to place the yellow large cubes and yellow small cubes from the Public Area into the Own Defense Area.
Manual Stage (210 seconds)	Launch High-Score and Benefit Satellites (Red/Blue/Yellow Balls)	Manually operate the robot to collect red or blue balls from the own field area and public area, and launch them into the first layer (Central Green Area), second layer (Black Metal Grid), or third layer (Central Recognition Area). Manually operate the robot to collect yellow balls and launch them into the second layer (Black Metal Grid), or third layer (Central Recognition Area).
	Deploy Low-Score Satellites (Red/Blue Cubes)	Manually operate the robot to collect alliance-colored cubes from the own field area and public area, and place them into the corresponding color cube area on the lower level of the Barrier Interference Area.
	Retrieve Rocket Carrier Devices (Cones)	Manually operate the robot to remove yellow cones from the Rocket Hanging Rods in the Public Area or from the upper layer of the Barrier Interference Area, and hang them onto the Cone

		Hanging Area in the Own Resource Area.
	Install Satellite Firewalls (Yellow Large/ Yellow Small Cube)	Manually operate the robot to place yellow large cubes and yellow small cubes from the Public Area into the Own Defense Area.
	Hang Protective Flag (Team Flag)	Manually operate the robot to hang the team's flag on the Flag Hanging Pole in the Own Flag Hanging Area.

Mission Name: Identify High-Score Satellites

Mission Description: This mission can only be completed during the Automatic Stage. During the Automatic Stage, the robot runs the automatic program to visually recognize the high-score satellite of the alliance's color and place the initial alliance-colored ball into the designated Central Recognition Area (QR code box) based on the draw number. This determines the ownership of the yellow ball (Benefit Satellite) scores for the entire match.

Benefit Judgement: At the end of the Automatic Stage, the Benefit Satellite ownership will be granted to the alliance that meets all of the following conditions:

a. The vertical projection of the alliance-colored ball is fully inside the designated Central Recognition Area (numbered according to the pre-match draw).

b. The alliance-colored ball is in contact with the bottom surface inside that recognition area.

If both conditions are satisfied, the yellow ball (Benefit Satellite) scores for the entire match will be assigned to that alliance.

Example Explanation: As shown in the figure below:

When the draw number is "ZERO", The red ball is fully placed inside the "ZERO" recognition area and touches the bottom surface, therefore, the Benefit Satellite

scores belong to the Red Alliance.

Although a blue ball also enters the “ZERO” area completely, it does not touch the bottom surface, so the Blue Alliance does not gain score ownership.

The “TWO” and “THREE” recognition areas also contain balls touching their bottoms, but since they are not the drawn recognition area, they do not affect the ownership determination.

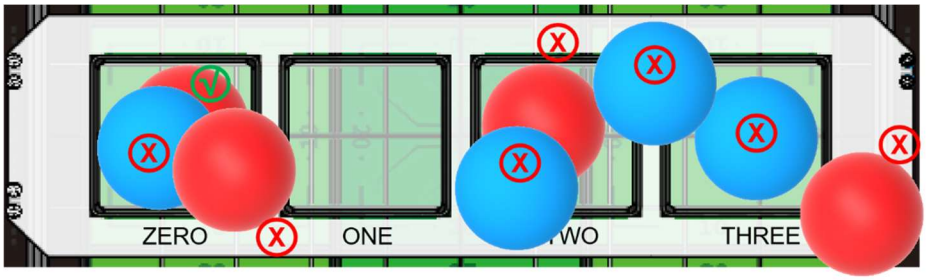


Fig.4.4-1 Benefit State Judgment of Yellow Balls

Mission Name: Launch High-Score Satellites and Benefit Satellites

Mission Description: This mission can be completed during both the Automatic Stage and the Manual Stage.

During the Automatic Stage, the robot runs the automatic program to collect red or blue balls from the own field area and public area, and launch them into the first layer (Central Green Area), second layer (Black Metal Grid), or third layer (Central Recognition Area). Robot runs the automatic program to collect yellow balls and launch them into the second layer (Black Metal Grid), or third layer (Central Recognition Area).

During the Manual Stage, participants manually operate the robot to collect red or blue from their own area and the public area, and launch them into the first layer (Central Green Area), second layer (Black Metal Grid), or third layer (Central Recognition Area). Participants manually operate the robot to collect yellow balls and launch them into the second layer (Black Metal Grid), or third layer (Central Recognition Area).

Scoring State Judgement: At the time of scoring, all of the following conditions must

be met for the score to be considered valid:

a. The vertical projection of the alliance-colored ball is completely within one of the nine-grid cells of **the first layer Central Green Area** (with the boundary defined by whether the bottom of the ball is located within the black rubber strips of the nine-grid area), and the robot must not be in direct contact with any balls within that area. Otherwise, all alliance-colored balls and yellow balls (if the alliance holds Benefit Satellite ownership) become invalid.

b. The vertical projection of the alliance-colored ball is completely within **the second layer Black Metal Grid Area**, and the robot must not be in direct contact with any balls on that layer. Otherwise, all related alliance-colored and yellow balls become invalid.

c. The vertical projection of the alliance-colored ball is completely within **the third layer Central Recognition Area**, and the recognition frame must remain upright. If the frame is tilted or collapsed, no score will be awarded based on balls inside it. The robot must not touch either the frame or any balls within it; otherwise, all alliance-colored and yellow balls (if owned) become invalid.

If all the above conditions are satisfied, the scoring status is considered valid.

Mission Score:

a. First Layer - Central Green Area (Only red or blue balls are counted for scoring; yellow balls are not valid.)

1. Each alliance-colored ball successfully launched into the Central Green Area scores points according to the nine-grid's labeled value.

2. If a ball rests on a black grid line or intersection, but its vertical projection is fully within the green area, it scores 5 points per valid ball (including red and blue balls).

3. If a ball is stacked on top of another ball, but its vertical projection remains fully within the green area, it scores 5 points per valid ball (including red and blue

balls).

b. Second Layer – Black Metal Grid Area (Red, Blue and Yellow Balls)

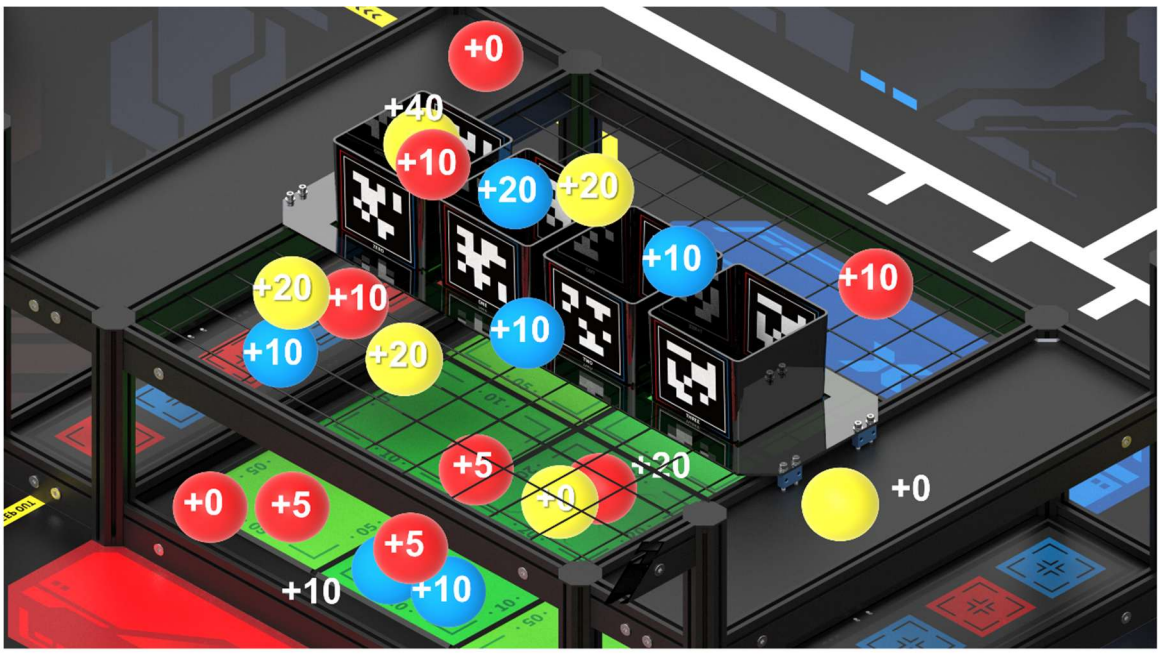
1. Each alliance-colored ball successfully launched onto the Black Metal Grid Area scores 10 points.

2. Each yellow ball (Benefit Satellite) successfully launched onto the Black Metal Grid Area scores 20 points, belonging to the Benefit Satellite ownership alliance.

c. Third Layer - Central Recognition Area (Red, Blue and Yellow Balls)

1. Each alliance-colored ball successfully launched into the Central Recognition Area scores 20 points. Each yellow ball successfully launched into the Central Recognition Area scores 40 points, belonging to the Benefit Satellite ownership alliance.

2. If a ball lands outside the frame of central recognition boxes (e.g., on the frame edge or between two recognition boxes), but its vertical projection is completely within the second layer Black Metal Grid Area, each valid red or blue scores 10 points; each yellow ball scores 20 points, belonging to the Benefit Satellite ownership alliance (follow the scoring rule b-(2)).



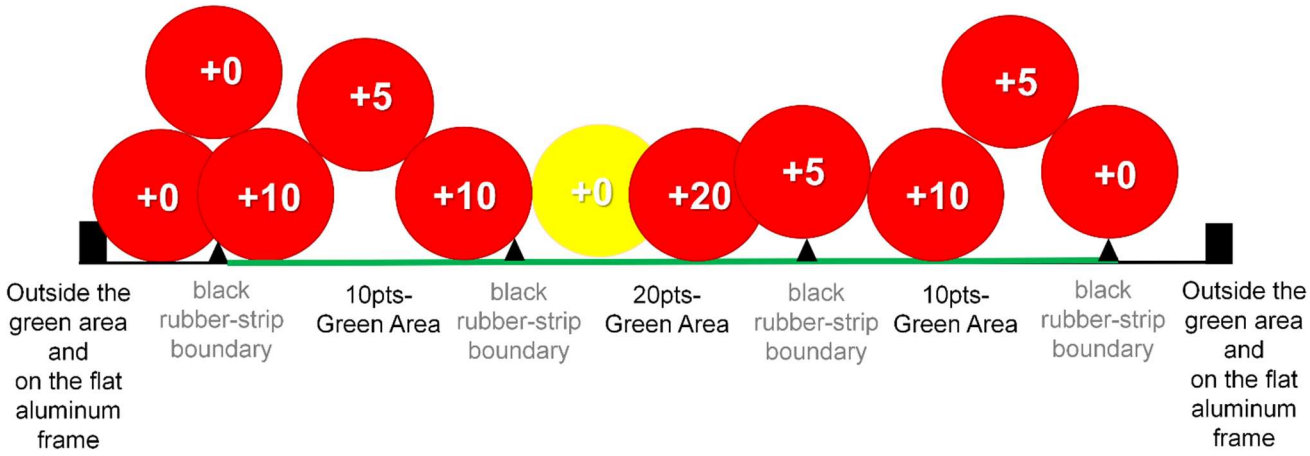


Fig.4.4-2 Scoring State Judgment of Balls

Mission Name: Deploy Low-Score Satellites

Mission Description: This mission can be completed during both the Automatic Stage and the Manual Stage.

During the Automatic Stage, the robot runs the automatic program to collects its alliance-colored cubes from both its own area and the public area, and places them into the corresponding color cube area on the lower layer of the Barrier Interference Area.

During the Manual Stage, participants manually operate the robot collects its alliance-colored cubes from both its own area and the public area, and places them into the corresponding color cube area on the lower layer of the Barrier Interference Area.

Scoring State Judgement: At the time of scoring, the red or blue cubes are considered valid if their vertical projection meets the following conditions:

a. The vertical projection of the cube is partially or fully inside the corresponding color cube area on the lower level of the Barrier Interference Area.

b. The robot is not in direct contact with any red or blue cubes within the lower level of the Barrier Interference Area; otherwise, all alliance-colored cubes already placed in that area will be invalidated.

If both conditions are satisfied, the placement is considered a valid scoring state.

Mission Score: Each successfully placed alliance-colored cube earns 10 points.

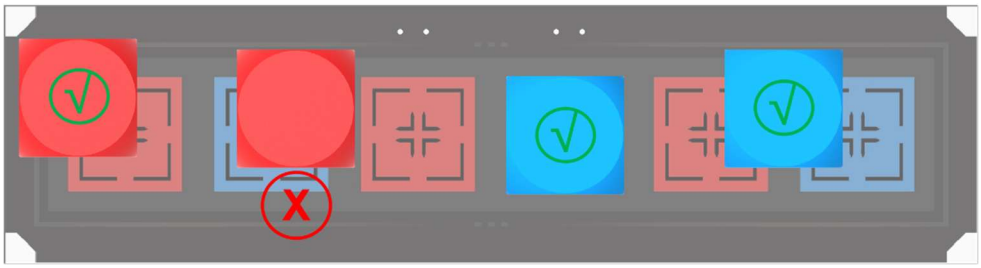


Fig.4.4-3 Scoring State Judgment of Red & Blue Cube

Mission Name: Retrieve Rocket Carrier Devices

Mission Description: This mission can be completed during both the Automatic Stage and the Manual Stage.

During the Automatic Stage, the robot runs automatic program to remove the yellow cones from the Rocket Hanging Rods and the second-level panels of the Barrier Interference Area, then hang them onto the Cone Hanging Area within the Own Resource Area.

During the Manual Stage, participants manually operate the robot to removing yellow cones from the Rocket Hanging Rods and the second-level panels of the Barrier Interference Area, then hanging them onto the Cone Hanging Area within the Own Resource Area.

Scoring State Judgement: At the time of scoring, a yellow cone is considered valid if it meets all of the following conditions:

a. The cone is completely inserted onto the octagonal pillar of the Own Resource

Area's Cone Hanging Area.

b. Each hanging rod may hold only one cone.

c. The cone is in direct contact with the adjacent rectangular flat aluminum bar connected to the octagonal pillar.

d. The cone must not be in contact with any other field elements.

If all conditions above are satisfied, the hanging is considered a valid scoring state.

Mission Score: Each successfully hung cone in the Cone Hanging Area earns 20 points.

Fig.4.4-4 Scoring State Judgment of Hanging Cone

Mission Name: Install Satellite Firewalls

Mission Description: This mission can be completed during both the Automatic Stage and the Manual Stage.

During the Automatic Stage, the robot runs its automatic program to collect yellow large cubes and yellow small cubes from the public area and place them into the Own Defense Area.

During the Manual Stage, participants manually operate the robot to collect yellow large cubes and yellow small cubes from the public area and place them into the Own Defense Area.

Scoring State Judgement: At the time of scoring, a yellow cube (large or small) is considered valid if it meets the following conditions:

a. The vertical projection of the yellow cube is completely within the Own Defense Area.

b. The robot is not in direct contact with any yellow cubes within the Own Defense Area; otherwise, all yellow cubes in contact will be invalidated.

If both conditions are satisfied, the placement is considered a valid scoring state.

Mission Score: Each yellow cube (large or small) successfully placed within the Own Defense Area earns 15 points.

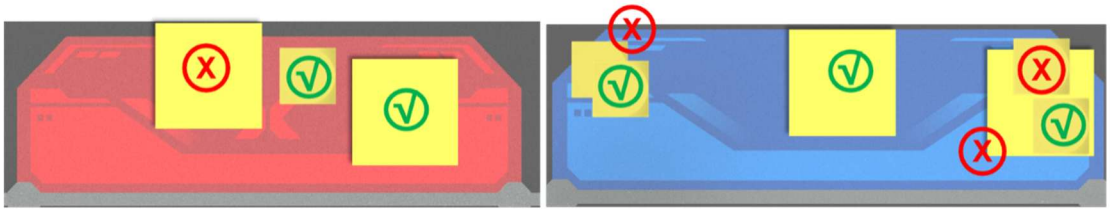


Fig.4.4-5 Scoring State Judgment of Yello Large & Small Cube

Mission Name: Hang Protective Flag

Mission Description: This mission can be completed only during the Manual Stage.

After the Automatic Stage ends, the participating team must manually place their self-made team flag onto the hook located on the border panel of their own area. The placement of the hook is determined by the participants themselves, and it may only be hung at any position along the boundary frame on the team's own side of the field. It must not extend beyond the team's designated field area. The tightness of the hook may be adjusted by the participants.

When placing the flag, it must not come into contact with any elements other than the hook, the tag board, the team flag, and the field boundary frame. In particular, it must not touch the robot.

Once the Manual Stage begins, no contact between the team members and the flag is permitted. During the Manual Stage, participants manually operate the robot to remove the team flag from the hook in their alliance area and hang it onto the flagpole in their own Flag Hanging Area.

Scoring State Judgement: At the time of scoring, the flag is considered valid if it meets all of the following conditions:

a. The flag complies with the official production requirements and is completely hung on the flagpole.

b. Each flagpole may hold only one flag.

c. The flag surface must be fully unfolded, in direct contact only with the flagpole, and not touching any other field elements (such as robots, octagonal pillars, flat aluminum bars, or scoring props).

If all of the above conditions are satisfied, the hanging is considered a valid scoring state.

Mission Scoring: Each successfully hung flag earns 30 points.

Fig.4.4-6 Scoring State Judgment of Hanging Protective Flag

Boundary State Judgement

During the match, if the position of the robot (or props) relative to the designated boundary is unclear, the following criteria apply for state judgment:

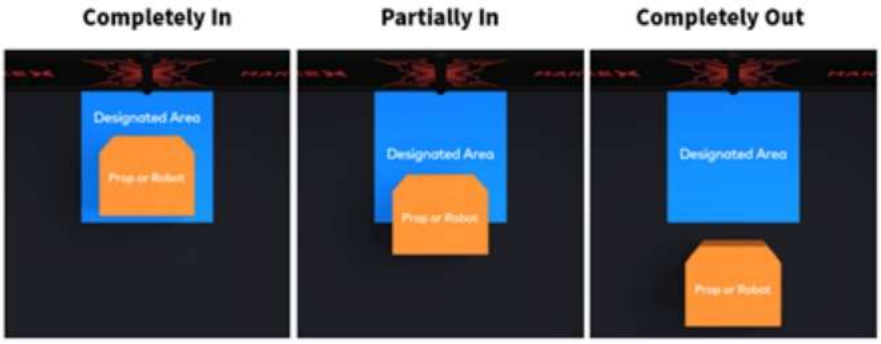


Fig.4.4-5 Boundary state determination

4.5 Scoring Explanation

The final score of the competition is determined by the final static state of the scoring prop after the competition. Competition missions, scoring props and their corresponding points are as follows. After the competition, the referee calculates the sum of the scores of each mission, and the alliance with the higher score will be the winner.

Alliance points of single match = respective color ball points + cone hanging/placing points + team flag hanging points + robot hanging points - penalty points

Mission	Scoring Props	Point of Single Prop	Max. Number of Single Prop
Launch High-Score and Benefit Satellites (Launch Balls)	Red / Blue / Yellow Balls	5 points each 10 points each 20 points each 40 points each	Alliance-colored Balls: 28 Yellow Balls: 14
Deploy Low-Score Satellites (Place Cubes)	Red / Blue Cubes	10 points each	5
Retrieve Rocket Carrier Devices (Hang Cones)	Cones	20 points each	6

Install Satellite Firewalls (Place Blocking Cubes)	Yellow Large Cubes Yellow Small Cubes	15 points each	Yellow Large Cubes: 4 Yellow Small Cubes: 2
Hang Protective Flags (Hang Flags)	Team Flags	30 points each	2

4.6 Single Match Flow

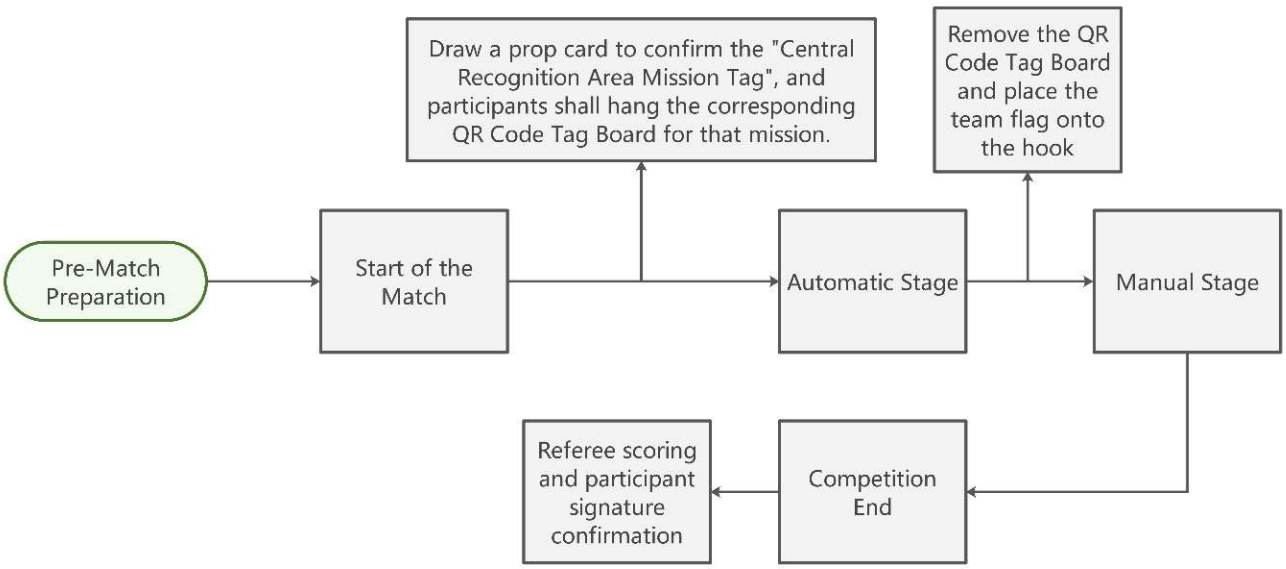


Fig.4.6-1 Single Match Flow Chart

Preparation

Before the start of each match, participants must complete both self-inspection and mutual inspection of their robots. Teams should arrive at the field in advance according to the schedule and, under the referee's guidance, complete the following preparations:

1. Keep the robot powered on and place it completely inside the alliance's Starting Area.

2. The Bluetooth controller must remain powered on and be placed outside the field boundary. Confirm that the field setup, props, and robots are properly positioned.

3. Ensure that each robot carries one alliance-colored ownership ball, and that each

team possesses two QR Code Tag Boards containing all four tag patterns: “ZERO,” “ONE,” “TWO,” and “THREE.”

4. Both alliances jointly confirm and select one alliance representative to stand beside the referee to draw the Prop Cards.

Once all checks are complete, teams must raise their hands to signal readiness. The referee will then begin the match.

Automatic Stage

The referee announces “Start the match, start by pressing a button”, officially beginning the competition, and starts a 5-second countdown: “5, 4, 3, 2, 1”:

(1) During this 5-second period, participants are allowed to touch their robots only to start the automatic program. After starting the program, no further contact with the robot is allowed.

When the 5-second countdown ends, the referee immediately announces “Entering the drawing stage” and begins a 20-second timer:

(1) Participants must have pre-set a 20-second automatic program in their robot. During this draw phase, after entering the match and starting the autonomous program, the robot must remain completely stationary — no early actions (false starts) are allowed.

(2) Both teams wait for the alliance representative to complete the Prop Card draw. After drawing, the representative must immediately announce the Prop Card tag number to confirm the Central Recognition Area mission number for the match.

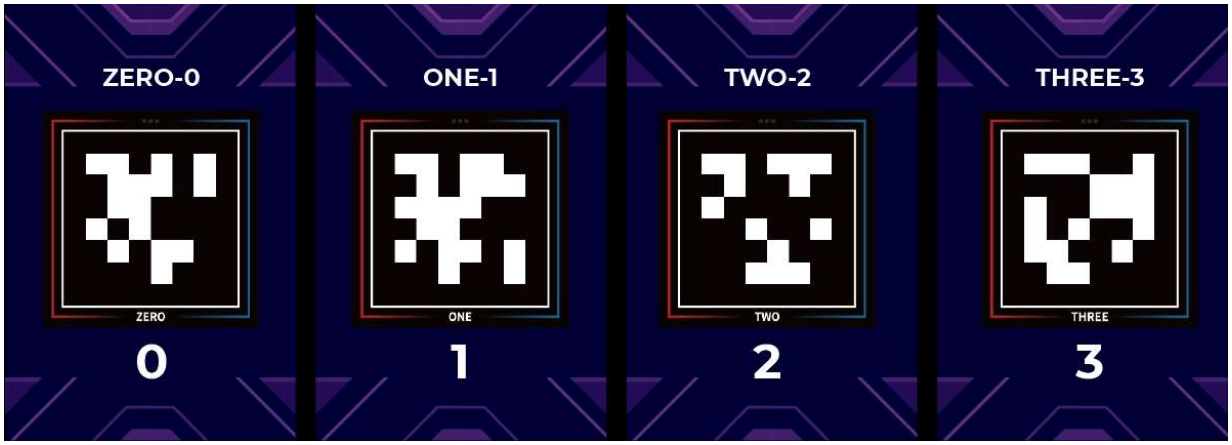


Figure 4.6-2: Prop Card

(3) Based on the drawn tag number, both teams must hang the corresponding QR Code Tag Boards on the hooks located on both sides of their Starting Area border panels and wait for the robots to automatically begin their missions. During this process, only the tag boards and field borders may be touched — robots must not be touched.

When the 20-second draw phase ends, the match automatically enters the Automatic Stage, the referee announces a 5-second countdown: "5, 4, 3, 2, 1 — Draw phase ended, automatic mission start!"

(1) Before the end of the Automatic Stage, the robot must complete its automatic program and remain stationary; returning to the Starting Area is not required.

(2) The referee will give a 5-second countdown to end the Automatic Stage and will then determine and announce the ownership of the yellow ball (Benefit Satellite) based on the status of the red and blue balls inside the Central Recognition Area.

Manual Stage

The referee announces "Place the flags".

At this time, participants are allowed to remove the QR Code Tag Boards from the

field border and place their team flags on the inner hooks of the field border. The tightness of the hook may be adjusted by the participants themselves. During this period, they are only allowed to touch the hook, the tag mounting board, the team flag, and the field boundary frame; contact with the robot is not permitted.

The referee then announces "Participants, pick up your Bluetooth controllers!"

At this time, participants are allowed to pick up their Bluetooth controllers.

The referee then announces: "Manual Stage, 5, 4, 3, 2, 1 — Start!"

Participants may now control their robots using the Bluetooth controllers.

The referee announces a 5-second countdown at the end of the manual stage.

After the Manual Stage ends, participants must immediately put down the controllers and stop operating their robots.

Referee's Scoring and Contestant's Results Confirmation

The referee will count the scores after the competition. If both alliances have no objections, the captains of both alliances must sign the score sheet to confirm the match result.

If either alliance disagrees with the result, the alliance captain may raise an objection to the referee before signing.

If the disagreement remains unresolved, the captain must write the reason for the objection in the "Remarks" section of the paper score sheet.

Before leaving the field, participants must assist the referee in restoring the field setup and orderly remove their robots and Bluetooth controllers from the field.

5.Technical Specifications

5.1 Robot General Specification

The Robot General Specification are prepared for better preparation for teams and ensures a fair and safe competition standard. The committee suggest team to programming and construct the robot under a fully comprehensive understanding of this specification. All robots must follow the Robot General Specification strictly and any against of the requirement will be asked to rectify. The robot might be disqualified if seriously against the specification.

Robot Mechanical Specification

T01. Each team is only allowed to participate in the competition with one robot. It is prohibited for one robot to participate in the match, while the other to conduct construction and modification outside the arena.

T02. Except for the parts like the main board, chassis, wheels and tracks that make the robot move on the flat are non-replaceable, contestants can replace other parts due to parts malfunction or competition mission requests.

T03. During the competition, the maximum extension size of the robot shall not exceed 320mm*320mm*450mm (length * width * height). The maximum extension size refers to the size that the robot extends its mechanic limit during operation. If the robot is made of a flexible material, the measurements of the maximum extended dimensions of the robot include the dimensions of the flexible material and the flexible material must not be subjected to external forces; flexible materials include but are not limited to, ties, tapes, foam blocks, etc.

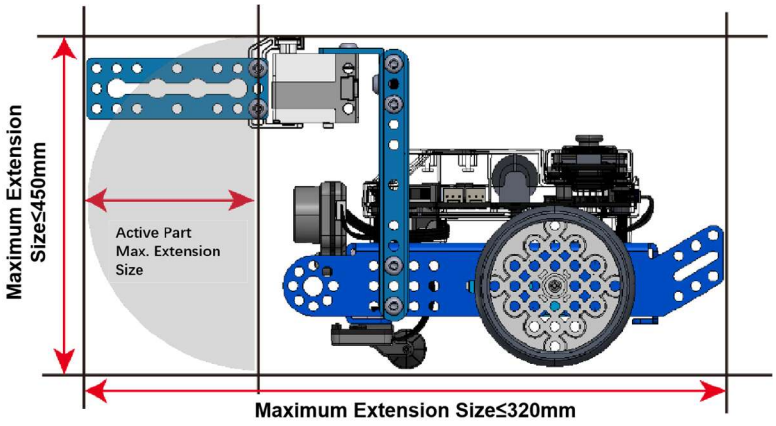


Fig 5.1-1 Maximum Extension Size -Side View

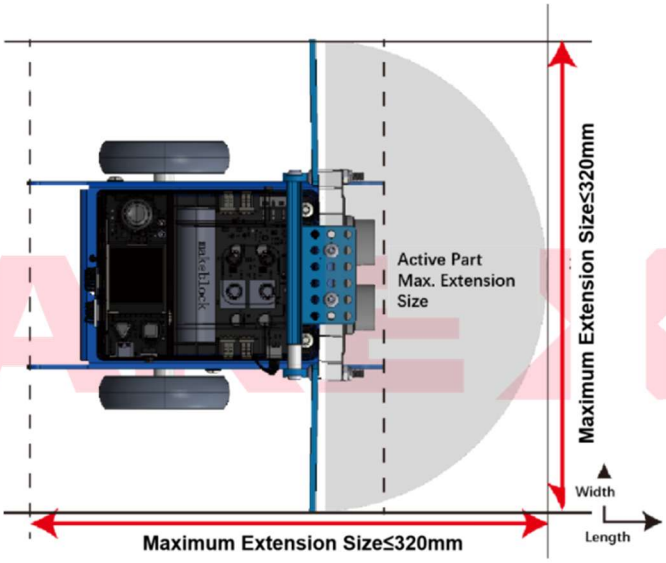


Fig 5.1-2 Maximum Extension Size -Top View

T04. During the competition, the maximum net weight of the robot shall not exceed 6 kg, including the weight of the battery and excluding the weight of the team flag.

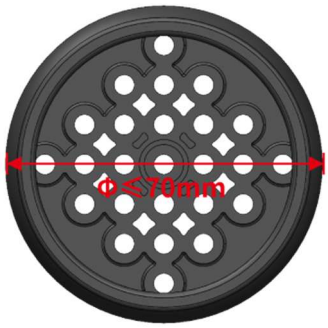


Fig 5.1-3 Wheel Size

T05. To ensure the fairness of the competition, the wheel diameter (including the

Rubber tire skin) must not exceed 70mm.

T06. During the entire competition, for every match, each robot must have a clearly visible red or blue alliance color marker on the top of the robot body (based on a top-down view). The color marker must have a minimum size of 30 mm*50 mm and may be made of acrylic, 3D-printed materials, or similar.

Robots without a visible color marker are not allowed to enter the field for competition.

Teams must complete the required correction in the waiting area or before entering the field without delaying the match schedule; only after the correction is verified may the robot be allowed to enter the Start Area beside the competition field to participate in the match.

T07. Equipment with high performance that infringes the competition fairness is prohibited, it must be operated with the following performance indicators:

Equipment	Component	Specification	Note
Motor& Servo	DC motors	1. High-Speed TT Motor ● Rated Voltage: DC 6V ● No-load speed: 312RPM±10% ● Gear Ratio: 1:48 2. 37 DC motors ● Rated Voltage: 12V ● Rated Speed: 50&200RPM ● Rated Torque: 4.5 kg.cm& 1.5Kg.cm 3. 180 DC Gear Motor ● Operating Voltage: 5V DC ● No-load Speed: 119 RPM ± 10% ● Stall Torque: 2.5 kg.cm	● No more than 4 motors (DC motors, encoder motor) are installed on the robot ● No more than 4 servos are installed on the robot ● It is forbidden to change the mechanical structure and electrical layout of any motor or servo. Only changes to the external wire length

	Encoder Motor	180 optical-encoder motor ● Driving Voltage: DC 7.4V ● Speed Range: 7.4V0~350RPM±5% ● Rated torque: 800g.cm ● Rotation Accuracy: ≤5° ● Reduction Ratio: 39:43	are allowed, provided that such modifications do not alter the motor's performance in any way.
	Servo	MECDS-150 Servo ● Working Voltage: DC 6.0V ● Torque Peak: 16.5kg.cm MS-1.5A Servo ● Working Voltage: 4.8-6V DC ● Torque: 1.31-.7kg.cm	

T08. To prevent the team from using some high-performance electronic devices to damage the fairness of the competition, the main control electronic devices used by the team should not exceed the following performance indicators:

System	Module	Specification	Note
Power System	Built-in Battery	● 18650 Lithium Battery: 3.7V 2500mAh	Only one built-in battery and one external battery

	External Battery	● 21700 Battery Pack Battery Capacity: 3.7V 8000mAh Discharge Rate： 3C	are allowed, which are required to be securely fastened inside the robot  Fig. External Battery Pack
Controlling System	Main-board	● Processor: Highly Integrated ESP32-WROVER-B ● Dominant Frequency： 240MHz ● Working Voltage: 6V ~ 13V (The minimum input voltage of the motor is required to meet the requirement of the motor's working voltage.) ● Communication Ports and Protocols: Serial Port/mBuild Protocol	Only one main board is allowed
	Extension Board	Micro Processor: GD32F403 ● Input Voltage/Current： 5V 2000mA (Rapid Charging) 5V 500mA (Simultaneous using and charging) ● Communication Mode ● Serial Communication：	

		Main-board to Extension Board ● Digital Signal: Digital Servo Interface ● PWM: DC Motor Interface	
Sensor System		Vision Sensor ● Viewing Angle： 90.0 degrees ● Effective Focal Length: 3.05 ±5% mm ● Identification Speed: 60< frames/seconds ● Method of Power Supply: 3.7V Lithium Battery or mBuild Power Module ● Power Consumption Range: 1-2W Ultrasonic Sensor ● Working Voltage: DC 5V ● Distance Range： 5-300cm ● Tolerance of Distance: ±5% Line Finder Sensor ● Working Voltage: DC 5V ● Detected Height：5mm-15mm	Type and quantity are not limited It is forbidden for robots to use any sensors that will interfere with the perception ability of other robots
Wireless Control System	Bluetooth Controller	Bluetooth Version: Support 4.0+ Distance of Remission: 20m ● Working Current: ≤25mA ● Transmit Power： 4dBm ● Transmit Data: Data packets	During the competition, only one Bluetooth controller is available for one team.

		within 100ms can be acquired by Bluetooth devices (low latency) ● Battery: Two No.5 AA Dry Batteries ● Supported Platform：macOS/ Windows	
	Bluetooth Module	Bluetooth Version: BT4.0 Band Range: 2402~2480MHz Antenna Gain: 1.5dBi Energy Consumption Grade：≤4dBm Working Current: 15mA	It is forbidden to use any form of wireless control device to communicate with robots other than the official Bluetooth controller, including but not limited to any artificially triggered sensors

T09. Laser sight is not permitted.

T10. Teams are not allowed to build robots using multi-DOF commercial products:

- Including but not limited to multi-DOF manipulator, manipulator, etc.
- Metal and plastic structural parts are not included.

T11. The following robot's parts that may cause danger are forbidden:

- Sharp angle;
- Oil pressure parts or hydraulic parts;
- Switches or contacts containing mercury;
- Parts that will conduct electrical current from robots to the arena;
- Parts that tend to develop connections with other robots, such as hook-shaped parts and other parts;
- Other dangerous parts as determined by the referees.

T12. The following materials that may cause danger are forbidden:

- Flammable and explosive gases;
- Materials containing liquids or gelatinous substances (except for glues and lubricants used in prescribed and small quantities);
- Materials that may cause arena contamination, such as sand, ink, etc.;
- Materials made from animal tissue;
- Materials that may cause danger as determined by other referees.

5.2 Specifications for Netflix Flag

T12. The team flag is a team self-made prop and each team is only allowed to use one team flag. The specifications is as below:

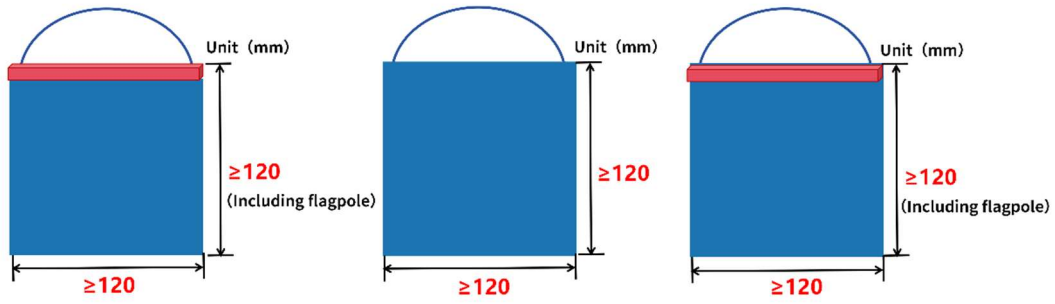


Fig 5.2 Protective Flag

- The structure and shape of the flag should be referred as the Fig5.2. It must be a regular-shaped flag; Shaped flags cannot be produced and used.
- The team flag must consist of a flag surface and suspension components; a flagpole can be voluntarily added to the suspension components.
- The flag surface material shall be fabric, paper, or other flexible materials, and it must be a rectangular whole flag. Each side must be no less than 120mm in length and cannot be cut or shaped irregularly. The content of the flag must include the "team name," and the team's name must be the official name of the participating team. No other team names may be marked or used on the flag.

- The flagpole portion of the suspension components may use rigid materials. If a flagpole is used, it may be made of rigid materials, but the length of the flagpole must be equal to the length of the side it is hanging from, and the cross-sectional dimensions of the flagpole must be smaller than 10mm x 10mm. Irregular flagpoles or additional unusual weights are not allowed, otherwise, the self-made prop will be deemed non-compliant and considered an invalid scoring prop. The overall dimensions must not exceed 200mm (length) x 10mm (width) x 10mm (height).
- Flags can only be allowed to be used in the competition if they meet the rule requirements at any point.
- The committee encourages teams to draw personalized patterns or words on the flag, which calls for positive content reflecting the competition theme and spirit, without showing words or pictures related to the MakeX Robotics Competition Committee.

6.Competition Rules

6.1 Penalty explanation

Suspension

E01. The referee issues a suspension command to ask the team to stop their robot's action. Besides, the referee is entitled to whether to remove the suspended robot from the arena based on specific conditions, including but not limited to robot failure, loss of control, etc.

Violation

E02. The referee issues a violation to the violation team and immediately deducts 20 points. In the meantime, the competition will not pause.

Red Card

E03. If any side or its members' behavior seriously affects the competition fairness or violates the safety rules, the alliance will receive 120 points deductions, and the offending team's robot will be suspended.

During the qualification round: take the team as a unit. If one team in the alliance receives a red card, the team will receive a 120 points deduction and the team's robot will be suspended, in the meantime the match will continue as usual. If both teams of the alliance receive a red card, the alliance will receive the points deduction and lose the competition. (If the score of the losing team is higher than the winner, the winner will receive extra points until the final score is 10 points higher than the final score of the losing team)

During the elimination round: take the alliance as a unit. If any team of the alliance receives a red card, the team will receive a 120 points deduction, the robots of the alliance will be suspended and the alliance will lose in the match. (If the score of the losing alliance is higher than the winning alliance, the winning alliance will receive extra points until the final score is 10 points higher than the final score of the losing team)

Disqualified from the match

E04. During the match, the team violated the rules, resulting in the invalidation of the score of the match and the robot will be suspended, but did not affect another match.

Disqualified of the entire competition

E05. The robot will be suspended and the team will lose the opportunity to continue to participate in the competition and the right to get an award. Scores of the entire competition will be disqualified.

Penalty Principles at Different Stages

E06. During the qualification rounds, penalties and penalty escalations are handled on a per-team basis. This means that during the qualification rounds, if any team in an alliance receives a violation/ red card, only that individual team will be subject to

the corresponding penalty. The other team in the alliance will still have its separate opportunities for penalties and penalty escalations, and the match will continue.

E08. During the elimination rounds, penalties and penalty escalations are handled on an alliance basis. This means that during the elimination rounds if any team in an alliance receives a violation/ red card, both teams in that alliance will be subject to the corresponding penalty. However, individual suspension instruction is an exception and is applied on a per-team basis, with penalties and restrictions based on the specific situation.

6.2 Operation Rules

Destructing or Contaminating Arena

R01. If arena contamination is caused by the robot, the robot will be regarded as in an unsafe state. Robots are not allowed to use double-sided tape, glue or any other materials to fix arena elements during competition.

- The robot that violates the rules will be suspended.

Destructing Other Robots

R02. Robots are not allowed to collide with other robots during competition.

- The robot that violates the rules will be suspended.

Using Banned Materials

R03. The following hazardous materials or dangerous structures embedded in robots are forbidden, such as:

(1) Flammable gases, fire or smoke generating equipment, hydraulic oil or hydraulic parts, switches or contacts containing liquid mercury (mercury);

(2) Hazardous Substances (e.g., Lead);

(3) Materials that may cause arena contamination, such as sand and other objects that may be scattered during competition;

(4) Materials that may have fixed connections with other robots;

(5) Materials with sharp edges that may cause injury.

(6) Materials made from animal tissue (for health and legal consideration).

(7) Materials containing liquids or gelatinous substances (except for glues and lubricants that are used as required).

(8) Parts that can conduct electrical current from robots to any other parts in the arena.

- The robot that violates the rules will be suspended. If the robot would like to continue to be a participant, the team should modify it to pass the re-inspection. A team with two violations will be disqualified entire competition.

Other Unsafe Factors

R04. In addition to R03, referees are entitled to decide whether the robot is safe or not.

- The robot that violates the rules will be suspended. The robot needs to be modified and re-inspected before it can be back to the match. A team with two violations will be disqualified entire competition.

The robot does not have a color mark on the top of its body

R05. Throughout the entire competition, for each match, the robot must have a clearly visible red or blue color mark on the top of its body (based on a top-down view). The color mark must be at least 50 mm*50 mm in size. The material is not restricted and may include acrylic, 3D-printed parts, etc. Teams without a color mark are not allowed to enter the field for competition.

- The violating team must correct the issue in the waiting area or before entering the field, provided that doing so does not delay their scheduled match time. Only after the correction is completed may the robot be allowed to enter the area next to the starting area.
- If the robot enters the field's starting area without the required color mark,

it will be suspension and may not leave immediately; it can only exit the field for correction after the match ends.

- If the robot is scheduled to participate in subsequent matches, the team must promptly complete the correction and undergo another inspection.

Using Electronic Device or Programming Device

R06. During the competition, it is not allowed for contestants in the competing area to use electronic communication devices (mobile phone, transceiver), it's prohibited to bring a computer, PC tablet or any other programming device into the competing area.

- The offence side shall stop their action immediately. If the offence side refuses to stop their action or sends the devices out of the competing area with the referee's reminder, or for those aggravating circumstances, the team will be disqualified for a single match and not allowed to continue the match, but it will not affect other matches.

Contestants' Requirements

R07. One operator and one observer for each team are allowed to enter the competing area. Each alliance includes two operators and two observers, and one of them is selected to be the captain of the alliance.

R08. It is not allowed for a third person as a substitution for on-arena players. Operators are responsible for controlling the robot in each match. The operator and the observer can freely switch their roles during the match.

- The offence side will be disqualified for a single match and not allowed to continue the match, but it will not affect other matches. The contestant will be required to rectify the situation and be subject to re-inspection.

R09. Contestants should tie up their long hair during competition preparation, robot debugging and on match. Toe-bearing shoes are forbidden.

- The offence side shall rectify the situation immediately and be subject to

re-inspection. If the offence side refuses to stop their action with the referee's reminder, or for those aggravating circumstances, the team will be disqualified for a single match and not allowed to continue the match, but it will not affect other matches.

Contestants' Standing Position

R10. During the competition, contestants shall stand in a certain range as shown in the following figure (the size of the operating area is subject to actual conditions).

- The offending team will have 3 seconds to return to their area and the referee will verbally read out the seconds. Teams that fail to return on time will receive a violation for the first and second offenses; a third offense will result in a red card and robot suspension.

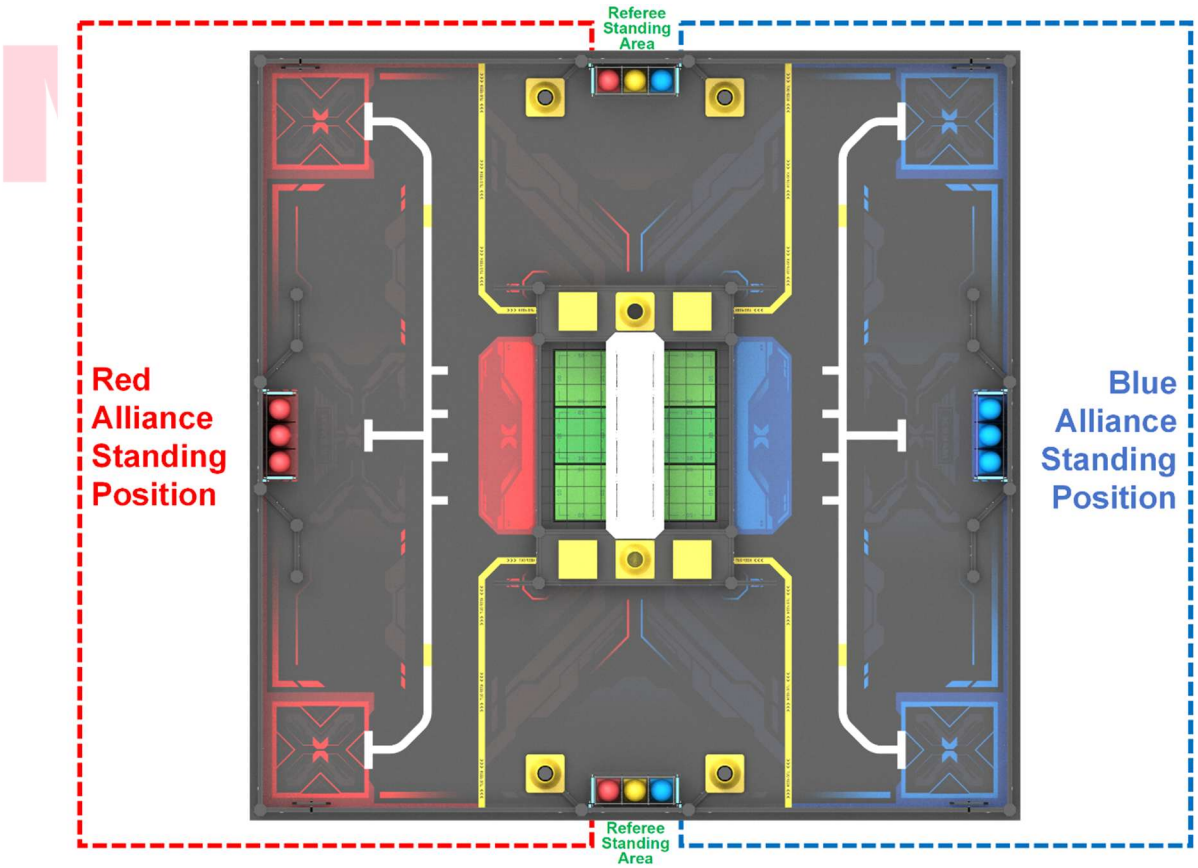


Fig. 6.2-1 Contestant's Standing Position

Rules of Elimination Round

R11. During each BO3 match in the elimination round, after the end of each match,

each team has 5 minutes to debug their robot and cannot do overtime.

- A team that violates the rules will be disqualified from a single match and not allowed to continue this single match, but the other matches are unaffected.

Failure to arrive on time at the competing area

R12. Teams shall arrive on time. Teams that do not show up in the competing area for more than 5 minutes, will be treated as giving up this match voluntarily. If the whole competition schedule is delayed, please refer to the specific notice.

- The offence team will be disqualified from a single match and not allowed to continue the match, but the other matches are unaffected.

Start the match in Advance

R13. Before the referee announces the start of the match in each stage, the robot's chassis must not move, and other structural parts must remain stationary (movement caused by inertia is an exception).

- The violating team will receive a violation for the first and second offenses; a third offense will result in a red card and robot suspension. At the same time, any scoring advantage gained becomes invalid, the field must be restored to its original state as much as possible, and the stage match will be restarted.
- During the 20-second Drawing Stage, the robot is not allowed to start the Automatic Stage early.

  Note: The button start occurs within the first 5 seconds after the match begins. After these 5 seconds, the 20-second Drawing Stage starts immediately. (During this stage, teams are only allowed to hang the QR-code tag board; they may not touch the robot. The robot must remain completely still. Please ensure the robot is pre-programmed with a stillness routine of more than 20 seconds to guarantee that it remains stationary throughout the Drawing Stage.) After the Drawing Stage ends, the match immediately enters the Automatic Stage. The robot must not start moving early during

the Drawing Stage. If early movement occurs: The violating team will receive a violation for the first and second offenses; A third offense will result in a red card and robot suspension. In addition, any scoring advantage gained becomes invalid. The field must be restored to its original state as much as possible. The match will restart from the button start, and the Drawing Stage will be conducted again.

Delay the end of the Competition

R14. After the end of the automatic stage and manual stage, the operator shall stop controlling the robot or stop the robot's operation program (except for the motion caused by inertia).

- The offence team will receive a violation. If the delay in ending the competition gives the offending team a scoring advantage, the referee shall judge it as an invalid score and restore the arena to its original state.

Manipulation violations during the automatic stage

R15. The Bluetooth controller shall be connected to the robot before the match. During the automatic stage, the blue-tooth controller shall be placed outside the arena. The automatic stage adopts the method of "Press the button on the CyberPi to start", and the automatic program operation time must be not over 30 seconds. After the automatic stage, contestants are only allowed to pick up their blue-tooth controller with the referee’s command; after the manual stage, contestants must stop controlling their robot immediately.

- If the robot fails to complete the automatic program or remains stationary before the end of the automatic stage, the offending team will be given a violation, and if it generates a scoring advantage, it will be considered invalid and must restore the original state of the arena; except for the non-stationary state due to the inertia of the robot's structure, which will be judged by the actual state of the robot's displacement behavior at the end of the stage.

- If a blue-tooth controller is used or direct contact during the automatic stage, the violating team will receive a violation for the first and second offenses; a third offense will result in a red card and robot suspension; and if the circumstances are severe, the team will be disqualified for a single match. The referee may decide whether the match needs to be restarted based on actual match conditions.

Operating Suspended Robot

R16. The operator is not allowed to control the robot after the robot is suspended.

- The team will be disqualified for a single match.

Robot's Left-Behind Components

R17. During the competition, robots may not detach (detach means separate from the main robot body and not under control) parts or leave mechanisms at the competition arena, excluding non-structural parts such as screws.

- the violating team will receive a violation for the first and second offenses; a third offense will result in a red card and robot suspension.

Robot In-conformity during the competition

R18. The size of the robot shall be in the state that is approved by both teams and the referees before the match. After the pre-match preparation phase after entering the competing area is confirmed by a show of hands by both sides, teams can't raise any appeal regarding this reason. Robots must comply with the size, weight and other parameters specifications during the match. Except for those situations that are caused by non-subjective factors, including being hit by opponents' arena element or other external forces, which leads to robots deforming or oversized.

- The offending party will be disqualified for a single match.

Robots Out of Boundary

R19. Except for the time applied to take out the robot for loading the team flag, the vertical projection of any part of the robot must not exceed the boundary of the

arena and the respective robots' movement boundary. If the robot is out of bounds, it must return to its own area within 3 seconds, and the referee will give a verbal reminder.

- Teams that fail to return on time will receive a violation for the first and second offenses; a third offense will result in a red card and robot suspension.

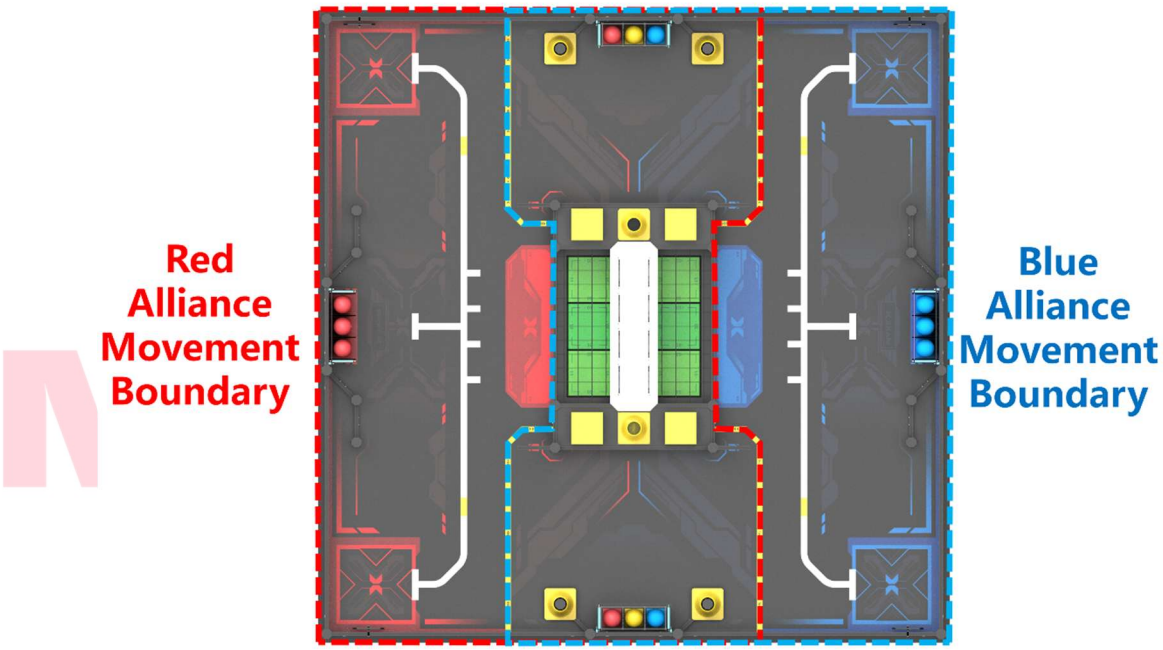


Fig. 6.2-2 Robot Movement Boundary

Prohibition of Out-of-Bounds Entanglement and Out-of-Bounds Separation

R20. During the Manual Stage, out-of-bounds entanglement and out-of-bounds separation are prohibited. Confrontation, defense, and contact are allowed only in the public area under the premise of complying with safety rules and without crossing boundaries.

- The violating team must stop the behavior within 3 seconds, during which the referee will give a verbal countdown. First and second offenses will result in a violation; a third offense will result in a red card and robot suspension.

- If the out-of-bounds behavior occurred during the Automatic Stage, the robot must return within 3 seconds after the Manual Stage begins to stop the behavior. First and second offenses will result in a violation; a third offense will result in a red card and robot suspension.
- **Prohibition of Out-of-Bounds Entanglement:** Determined based on whether any part of the robot's vertical projection crosses the boundary. Penalties follow rule R19. Robot Out of Boundary: the robot must return to its own active area within 3 seconds; otherwise, the referee may pause the match, separate the robots, and restore the field as much as possible before continuing.
- **Out-of-Bounds Entanglement:** When a robot commits an out-of-bounds violation (its vertical projection crosses the field boundary or the team's activity boundary) and makes contact with the opponent robot, resulting in prolonged contact, jamming, pinning, or pushing that prevents at least one robot from functioning normally. This is considered out-of-bounds entanglement.
- **Prohibition of Out-of-Bounds Separation:** This applies only when the robots initially made contact in the public area and cannot separate. Both robots must attempt to separate while remaining in the public area. A violation occurs if a robot actively or passively drags the opponent completely into its own territory. Determination is based on whether the entire vertical projection of a robot crosses into the opponent's field. Both teams will receive corresponding penalties: First and second offenses will result in a violation; a third offense will result in a red card and robot suspension. The referee will pause the match, separate the robots, return them to their respective starting area, restore the field as much as possible, and then resume the match.
- **Out-of-Bounds Separation:** When robots initially contact in the public area

but cannot separate, and one robot actively or passively continues prolonged contact, pushing, pulling, squeezing, or influencing the opponent while its entire vertical projection crosses into the opponent's field, it is considered out-of-bounds separation.

- If only part of the robot's projection crosses into the opponent's field but the robots have not fully separated, this is considered an ongoing separation attempt, and attempts to separate may continue.
- **Option for Voluntary Suspension Request:** If a robot is unable to return to its area or separate from the opponent, the team may voluntarily request robot suspension. The referee may pause the match and manually separate the robots. A suspended robot must return to its own start zone and remain there until the match ends; it may not leave the field.

Illegal Placement of Props into the Satellite Strategy High Ground (Central Green Area and Black Metal Grid)

R21. During the competition, robots must not move any field elements that are not permitted to be launched into the Satellite Strategy High Ground (Central Green Area or Black Metal Grid). (Items such as cones, cubes, robot parts, flags, etc. will violate this rule.)

- The violating team will receive a violation for the first and second offenses; a third offense will result in a red card and robot suspension.
- In addition, any prop illegally moved into the Satellite Strategy High Ground (Central Green Area or Black Metal Grid) becomes invalid. The determination is based on whether any part of the prop's vertical projection enters the inside of the flat aluminum frame bordering the Satellite Strategy High Ground.
- The referee may pause the match as needed, remove the illegal prop from the central area, restore the Central Green Area to its original state, and then resume the match. Removed scoring props and any resulting scoring

advantage caused by the violation will be considered invalid and may not be placed back into the field.

Illegal Removal of Props from the Satellite Strategy High Ground (Central Green Area)

R22. During the competition, robots are prohibited from removing scoring props that have already entered the Satellite Strategy High Ground (Central Green Area), including props on the first layer Central Green Area and props on the second layer Black Metal Grid.

The referee may pause the match as needed to restore the original state before continuing. Any scoring advantage gained from this violation becomes invalid.

- The violating team will receive a violation for the first and second offenses; a third offense will result in a red card and robot suspension.

Illegal Entry into the Central Area (Outer Flat Aluminum Frame of the Central Green Area)

R23. During the competition, no part of the robot's vertical projection may enter the Central Area, defined by the outer flat aluminum frame of the Central Green Area.

The violating team must stop the action within 3 seconds. The referee will give a verbal countdown.

- The violating team must stop the action within 3 seconds. The referee will give a verbal countdown.
- If no substantial advantage is gained within 3 seconds, the match continues.
- If a substantial advantage is gained, the referee may pause the match, restore the Central Area to its original state, and issue a penalty: first and second offenses are violations; a third offense results in a red card and robot suspension.
- If the robot does not stop the action within 3 seconds, the violating team will receive a violation for the first and second offenses; a third offense will

result in a red card and robot suspension.

Contestant Contact in violation

R24. Violated Contact with the Robot: Throughout the match, contestants are only allowed to contact the robot when the button start is triggered and when applying to load the team flag during the manual stage. At any other time, contestants are prohibited from directly or indirectly contacting the robot.

R25. Violated Contact with any Arena Elements: (1) Before the Automatic Stage begins, direct contact is allowed only with your team-color right-of-use balls and the QR-code tag board. (2) After the Drawing prop card begins, direct contact is allowed only with the QR-code tag board and the field boundary frame. (3) After the Automatic Stage ends and before the Manual Stage begins, direct contact is allowed only with the shield flag and the field boundary frame. Direct or indirect contact with any other scoring props is not permitted.

At all other times during the match, participants are strictly prohibited from directly or indirectly contacting any field elements or scoring props.

At the end of the match, participants must immediately put down the Bluetooth controller, step back from the field, and must not directly or indirectly touch any field elements, including the field boundary frame.

If illegal contact alters field elements in a way that affects the score, the referee must invalidate the affected points and restore the field to its original state as much as possible.

- The violating team will receive a violation for the first and second offenses; a third offense will result in a red card and robot suspension.
- Any scoring prop involved in the illegal contact becomes immediately invalid, must be removed from the field, and may not be returned to play.

Mentoring in Violation

R26. No person (including but not limited to the parents or mentors of the team)

other than the team members shall enter the competition area by any means, and no instruction shall be given in or outside the competition area in any form.

- The team will receive a violation. Penalties may be upgraded until disqualified for a single match.

Off-Arena Contact

R27. During the competition, contestants are not allowed to have any direct contact with off-arena persons and audiences, including but not limited to the delivery of the parts and Bluetooth controller.

- The offended party will be disqualified for a single match.

Damaging Other's Robot

R28. Throughout the entire competition (including matches, waiting periods, and debugging sessions), it is strictly forbidden to damage or destroy another team's robot in any form.

If the referee team or the event committee confirms—through on-site observation, video replay, or post-match inspection—that a team has engaged in actions that caused damage to another robot, the act of damaging another team's robot shall be deemed established.

- The team will be disqualified from the entire competition.
- For severe cases, the committee reserves the right to record the incident, which may affect the team's eligibility to participate in future competitions organized by MakeX.

Malicious Complaints

R29. In a single match, it is prohibited for contestants to make malicious complaints against the opposing team.

- Malicious complaint: After entering the competing area, if the complaining team confirms the need to raise a complaint with the referee, and the referee verifies and determines that the complained-about team has not

committed any actual rule violations, the complaining team will be deemed to have made a malicious complaint.

- The robot of the offending team will be suspended.

7 Appeal and Arbitration

7.1 Results Confirmation

Results Confirmation

When a single match ends, captains of both teams need to confirm the results with the referees and then sign the score sheet. The committee will not accept any appeal of the match after the captains have signed and confirmed the result. If there is an error regarding the points calculation for each item on the paper scoring sheet, it will be corrected and confirmed by the resulting approval staff when checking the results; other result-related issues will not be dealt with, and the signed results will be valid.

Dispute Settlement

If the participants still disagree with the result of the competition and do not agree with the explanation of the referee, they can refuse to sign the result, but the participant must write down the situation in the remarks column of the scoring sheet before leaving. The committee will only deal with appeals related to the reasons stated in the remarks column of the paper scoring sheet.

7.2 Appeal Procedure and Valid Appeal Period

Appeal Procedure

Appeals should be lodged within the “valid appeal period” by the prescribed procedure and follow the civil participation spirit. When a participant of a team disputes the current match and fills in the remarks, he/she must obtain an Appeal

Form from the Result Approval Area in the first instance; The captain of the team needs to fill in the Appeal Form and then cooperate with the Arbitration Commission to investigate the actual situation. Both sides will be required to arrive at the designated place if the Arbitration Commission requires. During the investigation, the captain of the appeal team must be present, and only captains or contestants of both teams can be present. The Arbitration Commission has the right to communicate with the appealing party alone, avoiding the mentor, the parents of the contestants, their relatives, or friends. The appellant should express facts clearly and objectively, not over-emotionally.

Valid Appeal Period

Normally, the appeal should be lodged within 30 minutes after the end of every single match. The appellant and the respondent must be present before the time appointed by the referee.

Appeal Response

Normally, the Arbitration Commission responds to the appeal after the end of the competition on the same day or before the start of the competition on the next day.

7.3 Invalid Appeal

Overdue Appeal

Appeals that are not lodged within the "valid appeal period" will be considered invalid and inadmissible. If the appellant fails to be present on time or leaves without any reason during the investigation, the appeal will be considered invalid. If the respondent fails to be present on time, the Arbitration Commission will directly determine the arbitration result and render it as a final result.

Appellants out of Stipulation

The appellants must be the participating contestant and the appeal of another person is invalid. The Arbitration Committee will caution the offending team if parents, mentors, or other irrelevant persons participate in the arbitration process

without the permission of the Arbitration Committee.

- Team or alliance will be disqualified entire competition for multiple invalid warnings.

Vague Appeal's Requests

If the Arbitration Commission is unable to understand the appeal or conduct the normal investigation due to the emotional factor of the appealing party, the team will receive a verbal warning.

The team

- or alliance will be disqualified entire competition for multiple invalid warnings.

Uncivil Appeal

Neither side shall make uncivil behavior nor offensive actions and remarks.

- The team or alliance will be disqualified entire competition for multiple invalid warnings.

7.4 Arbitration Procedure

Arbitration Procedure

The Arbitration Commission consists of the head referee, the arbitration consultant, and the competition technical director. The Arbitration Commission is responsible for accepting the appeals and conducting arbitration investigations, to ensure the smooth progress of the competition and the fairness and justice of the competition results. The playback videos and photographs of any competition may be inaccurate due to the shooting angle, which is only used as reference but not arbitration evidence.

Arbitration Results

The arbitration results can be divided into “maintaining the original result of the match” or “re-match”, and the two teams shall not appeal again. If the arbitration

result is a "re-match", the two teams shall have a re-match according to the time and arena stipulated in the Appeal Form. If either team fails to reach the arena within 5 minutes after the beginning of the match, the team shall be deemed to quit the match.

Additional Remarks

The Arbitration Commission determines the final arbitration result, and neither side shall dispute the result of the appeal anymore.

8. Statement

MakeX Robotics Competition Committee reserves the final interpretation of the *2026 Season MakeX Explorer Strategy Front Rules Guide.*

8.1 Rules Explanation

To ensure a fair competition and high-quality competition experience, the MakeX Robotics Competition Committee has the right to update and complement this Rules Guide regularly, and issue and implement the latest version before the competition.

During the competition, all matters not stated in the Rules Guide shall be decided by the referee team.

This Rules Guide is the basis for refereeing, and the referee team has the right to adjudication during the competition.

8.2 Disclaimer

All contestants in the MakeX Robotics Competition shall fully understand that safety is the most important issue for the sustainable development of the MakeX Robotics Competition. To protect the rights and interests of all contestants and organizers, according to relevant laws and regulations, all mentors and contestants registered for the 2026 MakeX Robotics Competition, shall acknowledge and abide by the following

safety provisions:

(1) Contestants shall take adequate safety precautions when constructing the robots, and all parts used for constructing the robots shall be purchased from legal manufacturers.

(2) Contestants shall ensure that the structural design of the robots takes into account the convenience of the inspection and actively cooperate with the host of the competition.

(3) When modifying and using the parts with potential safety hazards for the robots, it must conform to the national laws, regulations, and quality & safety standards. Those operations shall be manufactured and operated by persons with relevant professional qualifications.

(4) During the competition, the teams shall ensure that all the actions such as construction, testing, and preparation will not do harm to their team and other teams, referees, staff, audiences, equipment, and arenas.

(5) In the process of construction and competition, if any action that may violate the national laws, regulations, or standards occurs, all consequences will be borne by the contestants themselves.

The competition kits and parts sold and provided by the supporter, Shenzhen Makeblock Co., Ltd., shall be used by the instructions. Shenzhen Makeblock Co., Ltd. and MakeX Robotics Competition Committee will not be responsible for any injury or loss of property caused by improper use.

The official language for MakeX is Chinese. English or other language translations are prepared to facilitate the team's preparation process. All documents translated to English are for reference only.

8.3 Copyright Declaration

Appendix 1. Awards and Annual Points

In the 2026 season, according to the scale of the competition and the number of teams, the competition will be classified into Points Race/Regional Competition, National Competition, International/Intercontinental Competition, and Global Finals. In MakeX Explorer, participating teams can obtain points according to the number of wins, ties and losses in the match, and each team can voluntarily sign up for all kinds of Points Race throughout the season to accumulate the annual points. The accumulation of annual points is based on the Team Number.

In each competition, the annual points that teams can obtain are based on the win-loss points they get for every single match in the qualification round and championship round.

Category	Rounds	Win	Tie	Loss
Points Race/Regional Competition	Qualification	5	2	1
	Elimination (Best of 3)	10	/	2
National Competition	Qualification	10	4	2
	Elimination (Best of 3))	20	/	4
International/ Intercontinental Competition	Qualification	15	6	3
	Elimination (Best of 3))	30	/	6

Teams that have won the champion, runner-up, second runner-up and other special awards can obtain additional annual points. For the details of the award list, please refer to the **MakeX Awards Guide.**

Category	Awards	Regional /Points Race	National	International/ Intercontinental
Special Award	Champion	15	30	45
	Runner-up	10	20	30
	Second runner-up	5	10	15

	Innovative Design Award	-	5	10
	Engineering Notebook Award	-	5	10
Comprehensive Award	Outstanding Mentor Award (Personal)	-	-	-
	Promotion Ambassador Award (Group)	-	5	10
	Technology Sharing Award (Group)	-	5	10
	MakeX Spirit Award	-	-	10

For example, team X20000 won the champion in a Points Race, and all the results are shown below.

Qualification Round 1	Qualification Round 2	Qualification Round 3	Qualification Round 4	Annual Points from Qualification=13
Win (5)	Loss (1)	Tie (2)	Win (5)	
Top Eight Battle	Semi-final	Final		Annual Points from Elimination=30
Win (10)	Win (10)	Win (10)		

The total annual points that team X20000 obtains = 13+30+15 = 58.

Appendix 2. Engineering Notebook Guideline

***Instruction:**

1. The value of an engineering notebook: It helps the team establish files and record the whole learning process. Therefore, it is necessary to record engineering notebooks during the entire preparation for the competition.

2. Engineering notebook submission: Teams can use online documents or handwriting. No matter which way to use it, each team must submit a paper version onsite.

Paper engineering notebook: As the Challenge & Premier programs require the assessment process, one copy of the paper version shall be submitted by each team to the judges onsite. If there is no assessment process (Starter & Explorer), each team will need to submit one copy of the paper version to the staff at the inspection area. Teams that cannot submit the original engineering notebook should prepare their own copies.

3. An engineering notebook will be required for the evaluation of all technical awards. Please refer to the Competition Guide for the evaluation criteria.

Basic Requirements for Cover

The team's name, team number, and competition program must appear on the cover of the engineering notebook.

Basic Requirements for Contents

1.Clear content

Creating content brings convenience for the judges to review and quickly find the corresponding section.

2.Process records (Required)

Every improvement of the robots should be recorded from prototype design, construction, to the debugging. Keep pictures of all manuscripts, design drawings, calculation processes, circuit diagrams, etc., and insert them into the engineering

notebook in the form of pictures.

1) Schedule of robot building progress

2) Design inspiration/sketch

3) Technical principle (it can be disassembled into different parts)

4) Production step by step (with clear pictures)

5) Problems encountered and solutions

Examples of problems:

What technical failures did you encounter? Why did you fail? How did you solve the problems finally?

What efforts have you made for the robots? What improvements have been achieved?

Does your project progress schedule go as planned? What accidents or delays have occurred? How to fix it?

Have there been any disputes among the team members and how to settle them in the end?

3.Projects summary

1) The structure and function of the project (with pictures and text enclosed)

2) The technical innovations of the project

3) Competition strategies for scoring and defense

4.Team introduction

1) A brief biography of each team member and their role on the team

2) Culture displaying (logo, team flag, slogan, posters, T-shirt, etc.)

3) Excellent achievements sharing (Stories)

5.Feelings and other things you want to share (optional)

1) Achievement in the competition (Technical)

2) Growth in the competition (Spiritual)

3) Suggestions for competition

Appendix 3. Robot Self-Check Form

MakeX Explorer Strategy Front

Robot Self-Check Form

Please follow the requirements of the self-checklist and check the box if your robot meets the requirements. And submit the signed self-checklist during the inspection day. Thanks for your cooperation.

Team Number: _____ Team Name: _____
Mentor Name _____
Actual attended Team Member: _____

1. Basic Information
Robot Mainboard Number: _____ (A 12-bit code consist of numbers and alphabet, please find from the CyberPi) **Total quantity of mainboard: 1 ☐Yes**
Robot Size: Length_____mm, Wide_____ mm, Height _____ mm. (Robot size should not exceed: length 320mm, width 320mm, height 450mm. Please measure your robot and fill in the maximum extension size)
Robot Wheel Diameter: _____ mm (Should not exceed 70mm)
Robot Weight: _____kg (Should not exceed 6kg)
Robot Color Markers (both red and blue prepared): ☐ Yes
Team Flag: Length_____ mm, Wide_____ mm (The flag surface must be a rectangular whole flag. Each side must be no less than 120mm in length. The content of the flag must include the "team name,". If a flagpole is used, it may be made of rigid materials, but the length of the flagpole must be equal to the length of the side it is hanging from, and the cross-sectional dimensions of the flagpole must be smaller than 10mm x 10mm. Irregular flagpoles or additional unusual weights are not allowed.)
2. Equipment

Name and quantity of motors (quantity ≤4): **Name of quantity of servos (quantity ≤4):** **The total quantity of motors and servos ≤8** ☐**Yes** Please write down specific names, types and quantities. If non-conventional motors or servos are used, please provide the relevant parameters according to the requirements of the competition guide.
Quantity of Bluetooth controller is 1 ☐**Yes** **Wireless control: Bluetooth version: BT4.0** ☐**Yes** **No laser sight is used** ☐**Yes**
Name and parameters of battery: (18650 Lithium-ion, 3.7V 2500mAh) ☐**Yes** **External battery:(21700Battery Pack 3.7V 8000mAh 3C)** ☐**Yes**

3. Others

No.	Items	Specific Requirements	Meet Requirement
1	Safety Protection	The robot's structure that may harm people is required to ensure safety protection in the process of robot loading, unloading and transporting.	☐Yes
2	Competition arena Destruction	Competition arena destruction is prohibited in the process of robot loading, unloading and transporting.	☐Yes
3	High-power Equipment	High-power equipment is not available during competition and preparation.	☐Yes
4	Energy Storage Equipment	Please keep safe while using energy storage devices (springs).	☐Yes
5	Banned Material	Robots are not allowed to use the flammable gases, pyrotechnic equipment, hydraulic components, mercury-containing components, exposed hazardous materials, unsafe counterweights, designs that may cause entanglement and competition delays, sharp edges and angles, materials containing liquids or gelatinous substances, and any part that the electric current on the robot may be conducted to the competition area.	☐Yes
6	Personal Safety	Long hairs shall be tied up; contestants are prohibited from wearing toe-bearing shoes to enter the competition area.	☐Yes

7	Sensor	Robots are prohibited from using any sensors that can interfere with the sensory capabilities of other robots	☐Yes
8	Self-made Parts	Teams can use self-made parts by 3D printing or corrugated cardboard, wood, acrylic, Rubber bands, etc. All self-made parts cannot have the producer's logo.	☐Yes
9	Mechanical Parts	Teams can use self-made mechanical parts by 3D printing or laser cutting. Teams must not use commercial structures with mature design, including but not limited to multi-DOF robotic arms or hands.	☐Yes

Our team has checked our own robot according to the self-check form and has filled in the actual data on this form and submitted it to MakeX Robotics Committee. We promise that we will participate in the competition in the above state and will report any changes in time. During the competition, if the robot does not comply with the requirement or our team uses any in-compliance robot, the competition result will be disqualified and all responsibilities will be taken by the team without objection.

Team Leader/Mentor Signature：

Date：

Appendix 4. MakeX Explorer Strategy Front Score Sheet

MAKEX ROBOTICS COMPETITION

2026 MakeX Explorer Strategy Front - Scoring Sheet

Competition Info: Qualification Round ☐ / Elimanation Round ☐ _____(Arena) No. _____ (Session)

Team Registration	Match Points					Winner
Red Alliance	Red Alliance Score & Qty			Blue Alliance Qty & Score		Red Alliance
Team 1 (No.) :	√/×		Determines the ownership of the yellow ball	√/×		
Team 2 (No.) :	*(30pts/each)*		Team Flag 30pts/each		*(30pts/each)*	
	(20pts/each)		Cone 20pts/each		*(20pts/each)*	
Blue Alliance	*(15pts/each)*		Yellow Cube 15pts/each		*(15pts/each)*	Blue Alliance
Team 1 (No.) :	*(10pts/each)*		Red/Blue Cube 10pts/each		*(10pts/each)*	
Team 2 (No.) :	*(20pts/each)*		Yellow Ball 2nd Metal Gird 20pts/each 3rd Box 40pts/each		*(20pts/each)*	**Remark**
	(40pts/each)				*(40pts/each)*	
Captain of Red Alliance:		5 pts:	Red/Blue Ball 1st Green Area (TBD) 2nd Metal Gird 10 pts/each 3rd Box 20pts/EACH	5 pts:		(If there is any disagreement about the results, please write down the situation clearly and sign here.)
(Please confirm the scoring results and sign here.)		10 pts:		10 pts:		
		20 pts:		20 pts:		
Captain of Blue Alliance:			Penalty			
(Please confirm the scoring results and sign here.)			Total Points			
	Referee Signature:		*(Please confirm the scoring results and sign here)*			

Appendix 5. Competition Resources

Competition resources include but are not limited to official resources provided by the committee, such as Competition Guide, Equipment Instructions, Rules Videos, etc.

The contestants are obliged to keep abreast of the update of competition resources before the competition, and any problems caused by the contestants' failure to keep abreast of the updates shall be borne by the contestants themselves. All official competition resources will be updated in MakeX Website.

MakeX Robotics Competition Committee will revise and improve the Rules Guide with the progress of the competition and the new version will be announced in MakeX Website. The contestants and mentors can download the latest version in MakeX Website.

MakeX Website Download https://www.makex.cc/en/information/download.

MakeX Official Website: https://www.makex.cc/en.

Any Feedback & Question Please Sent to:

makex_overseas@makeblock.com

Online link for the MakeX Explorer Strategy Front Building Instructions (scan the QR code):

Download Scoring Sheet and Prop Cards (scan the QR code):

MAKEX

Official Website：https://www.makex.cc/en
Official Email：makex_overseas@makeblock.com