

V1.1

Using a 32-bit motor driver chip and Field-Oriented Control (FOC), the RoboMaster CS30 Brushless DC Motor Speed Controller enables precise control over motor torque.



Exclusively designed for the RoboMaster series 32-bit Brushless DC Motor and CS30 Brushless DC Motor Speed Controller, the M3000 Assembly Kit includes motor cables and a terminal board.

RoboMaster System Specification Manual
RoboMaster System User Manual, Introduction of RoboMaster System Module

See M3000 Assembly Kit Package serial number and M3000 Motor Cable Kit serial number for more information.

The 23rd China University Robot Competition

ROBOMASTER 2024

University Championship

Participant Manual

Prepared by RoboMaster Organizing Committee

Released in April 2024

Statement

Participants are forbidden from engaging or participating in any actions determined by the RoboMaster Organizing Committee (hereinafter referred to as “the RMOC”) as involving public disputes or sensitive issues or causing offence to the public or certain social groups, or damaging the image of RoboMaster; otherwise, RMOC shall have the right to disqualify offending persons permanently from the competition.

Release Notes

Date	Version	Release Notes
2023.4.18	V1.1	<ol style="list-style-type: none"> 1. Added the “Quality Manager” position. 2. Added instructions related to the competition system. 3. Added RM Award and related information. 4. Revised requirements related to culture-building analysis. 5. Added information on selected data type for Engineer robots and the Dart System in the Robot Combat Awards.
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1. Overview

Affiliated with the China University Robot Competition, the RoboMaster University Series (RMU) provides a platform for robotic competitions and academic exchanges among global technology enthusiasts. Since its establishment in 2013, the RoboMaster has been committed to its mission – “empowering young learners to transform their world with the power of engineering and technology”. The RoboMaster is also dedicated to tapping the potential of young talents with engineering backgrounds while widely passing on the beauty of science & technology as well as innovation to the public.

The RoboMaster University Championship (RMUC) focuses on evaluating the participants’ abilities to apply scientific and technical knowledge in an integrated and practical context. It combines robotics-related areas such as machine vision, embedded system design, mechanical control, inertial navigation and human-machine interaction, while integrating e-sports and robotics competitions in an innovative manner. The robotic battles are growing to become more intuitive and engaging, drawing attention from both technology enthusiasts and the public.

2. Participation

2.1 Participating Teams

The participating teams for RMUC 2024 are divided into two categories: teams from mainland China and teams from Hong Kong, Macau, Taiwan and overseas.

The below shows the definition, participation rights and entry procedures for each type of team.

Table 2-1 Team Definitions, Participation Rights and Entry Procedures

Teams from mainland China	
Definition	Participating teams from universities or colleges in mainland China (including Chinese-foreign joint universities or colleges) that pass the registration review within the specified period and meet the relevant entry requirements.
Participation Rights	Qualified for the current season competitions, awards application and promotion.
Participating Procedures	<ol style="list-style-type: none"> Teams are to follow the procedures applicable to mainland teams. Teams can participate in the Regional Competition (for the mainland China division), and those who perform well will advance to the Final Tournament.
Teams from Hong Kong, Macau, Taiwan and overseas	
Definition	University or college participating teams from Hong Kong, Macau, Taiwan and overseas that pass the registration review within the specified period and meet the relevant entry requirements.
Participation Rights	<p>Qualified for the current season competitions, awards application and promotion.</p> <p>Note: Due to their different education systems, senior high school students from Hong Kong, Macau, Taiwan and overseas are allowed to participate, but their number must not exceed 20% of the total number of team members.</p>
Participating Procedures	<ol style="list-style-type: none"> Teams are to follow the procedures applicable to teams from Hong Kong, Macau, Taiwan and overseas. Teams can participate in the Regional Competition (for the international division), and those who perform well will advance to the Final Tournament.



Teams participating in the Regional Competition (mainland China) according to the entry procedures for teams from mainland China are divided into Tier-1 Teams and Tier-2 Teams. For further details, please refer to [“Scoring and Ranking System”](#).

Teams must adhere to the following rules:

- R1 All participating teams are required to form their teams at the [RoboMaster Registration Center](#), fill in their team details, and invite team members to join. Before the registration is confirmed by the Captain, the details may be amended. Once it is confirmed, the details will be locked in and submitted to the RMOC for review. The registration will be approved if the details meet the rules in this chapter. The RMOC will open the Registration Center from time to time in the competition season, during which teams can modify their team and member details, their roles and granted permission, etc. The Registration Center will be open for one last time before the competition starts. The RMOC will follow the final information submitted in preparing and giving out award certificates.
- R2 Any team participating in different competitions must use the same team name. A team’s name must be in the format of “XXX Team”, where “XXX” shall be the team’s self-chosen name. The total length of the team name should not exceed 16 English letters or 8 Chinese characters. The team name must not include the school name or its abbreviation in Chinese/English, or such Chinese characters as “队”, “团队”, and “战队” which mean “team” in English, or other special symbols such as “*/-+”. The team name must reflect the positive and pioneering spirit of the team and comply with relevant laws and regulations in China. If the RMOC determines that a team’s name does not align with the spirit of the competition, it has the right to require the team to change its name.
-



After submitting their registration materials, participating teams are not allowed to change their team names.

- R3 A participating team must be attached to a university or college, and must meet the requirements for the team roles, number and identity of participants stated in “2.1 - Participating Teams”. If any participant’s identity does not meet the requirements, the referee will issue a Verbal Warning to the participating team. If the Verbal Warning is ineffective, the highest penalty that can be given to the offending team is disqualification, depending on the seriousness of the situation.
- R4 In principle, each college or university is only allowed to have one qualified team for one competition (challenge). Institutions having multiple campuses in different cities, making it difficult for certain students to compete as a team, are allowed to form more than one campus-based teams provided it has been verified by the RMOC. If a school has more than one team applying for the competition, refer to the [Announcement on the List of Representative Teams for RoboMaster University Series 2024](#). The applicant must ensure that its registration information is complete and accurate, and that it will undertake the corresponding responsibilities.

The applicant shall bear all consequences caused by any missing or inaccurate information. For special circumstances, the applicant may contact the RMOC, which will handle the case based on actual circumstances. The RMOC reserves the right of final interpretation.



The RMOC will reject the registration of any team that does not meet any of R1-R4. The participating team can reapply until it meets the requirements.

- R5 Any two to five schools that do not have their own individual teams can form an intercollegiate team.
- A. Before establishing an intercollegiate team, members must consider all their respective circumstances and communicate with each other thoroughly about team planning. Any operating and R&D costs, personnel arrangements or disputes arising therefrom must be handled by the intercollegiate team itself, for which the RMOC bears no responsibility.
- B. Intercollegiate teams are not allowed to be split after they're officially established. They can only participate in the RMUC as intercollegiate teams. If an intercollegiate team is disbanded after passing the registration review, the team will be deemed to have voluntarily dropped out of the competition.
- C. The intercollegiate team's name should be "XXX Intercollegiate Team" instead of "XXX Team". An intercollegiate team is required to upload an Intercollegiate Team Statement issued by its college or university to the registration system. Refer to the participation information pack for the template of the Intercollegiate Team Statement.
- D. If more than 50% of the members in an intercollegiate team are Regular Members of the team(s) from Hong Kong, Macau, Taiwan and overseas, this intercollegiate team shall be categorized as a team from Hong Kong, Macau, Taiwan and overseas. Otherwise, the intercollegiate team shall be categorized as a team from mainland China. For the corresponding rights and processes in all team categories, please refer to "2.1 - Participating Teams".
- R6 In the same season, one participant can only join one team for the competition. If a team member fails to observe the above requirement, the referee will issue a Verbal Warning and require the member to withdraw from one of the teams. If the Verbal Warning is ineffective, the highest penalty that can be imposed on the offending member and team is disqualification from the competition.
- R7 If any two or more teams do not meet any one requirement under the "Five Differences" Rule, they shall be treated as the same team.
-



The "Five Differences" Rule: different team names, different team members, different supervisors, different affiliated institutions (college or other educational institutions), and different robots.

- R8 Provided the relevant registration requirements are met, one team can sign up for more than one RoboMaster competition (including RMUC and RMUL).

R9 The RMOC will deem a team participating in different competitions in the same season as one and the same group to handle the various competition processes more efficiently (including free material supply, material purchases, and participation support). A team cannot be broken up after completing registration for the season.

2.2 Participants

The RoboMaster advocate teamwork and cooperation. To encourage the team members to take the initiative and undertake important roles within the team, the RMOC will award participants who have made great contributions to the competition. Prizes include: Outstanding Captain Award, Outstanding Supervisor Award, etc. For more details, please refer to “5.8 -Outstanding Contribution Awards”.

The roles and responsibilities of participants are as follows:

Table 2-2 Participant Roles and Responsibilities

Roles	Role Instructions	Responsibilities	Status	No. of Persons
Supervisor	<ul style="list-style-type: none"> ● The person in charge of the team ● Cannot assume both the roles of Advisor and Regular Member 	<ul style="list-style-type: none"> ● Build and manage the team ● Guide the team in building their robots ● Responsible for the personal safety of the team and the security of its property ● Coordinate on-campus resources, guide the team in developing project plans, controlling preparation progress, and help the team successfully conclude the match 	Faculty members of the team’s college or university who are qualified to teach or conduct scientific research and will have graduated by August 2024 (Evidence may be required to be shown on site)	1-8

Roles	Role Instructions	Responsibilities	Status	No. of Persons
		<ul style="list-style-type: none"> Cooperate with the RMOC proactively during the competition 		
Advisor	<ul style="list-style-type: none"> Team’s Advisor Cannot assume both the roles of Supervisor and Regular Member 	<ul style="list-style-type: none"> Provide guidance and support to the team on strategy, technology, management, etc. Undertake robot-building tasks and handle other competition-related matters. 	Full-time junior college students, undergraduates, postgraduates, and doctoral degree candidates in colleges and universities, as well as engineers, researchers and faculty members working in enterprises, research institutions, or as freelancers	0-5
Regular Members	<ul style="list-style-type: none"> Include the Captain, Vice Captain, PR Manager, Project Manager, Business Manager and General Members. Cannot assume both the roles of Advisor and Supervisor. 	Please refer to the table below.	Full-time junior college students, undergraduate students, postgraduate students, and doctoral students with proof of their identity between September 2023 and August 2024 (Evidence may be required to be shown on site).	10-35
Reserve Member	The Reserve Members of the team will be temporarily engaged in the competition for personal study and growth and may become Regular Members after being observed and promoted by the team.	Assist the Regular Members in the competition		0-20

Roles	Role Instructions	Responsibilities	Status	No. of Persons
	Note: Reserve Members are not qualified for the award. They will only receive electronic certificates of participation issued by the RMOC.			

Table 2-3 Regular Members’ Roles and Responsibilities

Roles	Role Instructions	Responsibilities	No. of Persons
Captain	<ul style="list-style-type: none"> ● Core team member ● The technical and tactical leader of the team ● Person in charge of building team culture ● The main liaison with the RMOC 	<ul style="list-style-type: none"> ● Division of labor and personnel management ● Coordinate technical proposals, tactical arrangement, and important decision-making ● Attend Captains Meetings, represent the team in confirming match results, and participate in appeal processes during the competition ● Foster team culture and positive values among team members ● Responsible for the legacy and development of the team <p>Note: Before the Regional Competition, the Captain of the team must be confirmed. They shall be involved in the core competition processes and team management.</p>	1
Vice Captain	Core team member	<ul style="list-style-type: none"> ● Form the core management team along with the Captain ● Assist the Captain with the management of the team 	0-3
Project Manager	<ul style="list-style-type: none"> ● Core team member ● Overall manager of the project 	<ul style="list-style-type: none"> ● Manage project tasks and coordinate funds, materials, personnel and other resources ● Establish sound rules and systems for managing the team 	1

Roles	Role Instructions	Responsibilities	No. of Persons
		<ul style="list-style-type: none"> ● Plan and manage the team’s targets, progress, and costs 	
<p>Quality Manager</p>	<ul style="list-style-type: none"> ● Person in charge of quality assurance during robot development ● Establish and maintain a quality management system 	<ul style="list-style-type: none"> ● Design robot test processes, test cases, and test methods, and organize functional, stability, life, and other tests at each stage of the development process to ensure the stability of robots’ preset functions ● Engage in test method improvement and test tool development to improve test efficiency and quality 	<p>0-2</p>
<p>PR Manager</p>	<ul style="list-style-type: none"> ● Person in charge of promoting the team ● Inheritor and implementer of the team’s culture 	<ul style="list-style-type: none"> ● Pool promotion resources and establish a comprehensive system <ul style="list-style-type: none"> ➢ Organize activities via university platforms and promote the team and the competition at university ➢ Organize daily promotional activities for the team via new media channels, keep the team active, and improve the team members’ alertness to the competition ● Draft and execute publicity plans, develop the team’s culture and ensure the inheritance of the team’s outstanding culture to attract and retain more like-minded and talented members of the team <ul style="list-style-type: none"> ➢ Write and tell stories of distinguished teams and core team members, and take publicity measures to promote the teams’ culture for wider external recognition ➢ Build a pleasant contact ecosystem and cultural atmosphere, and create a mechanism for the retention of excellent culture 	<p>1</p>

Roles	Role Instructions	Responsibilities	No. of Persons
		<ul style="list-style-type: none"> Cooperate with the RMOC proactively in publicity and manage the content generated and fans gained by the team 	
Business Manager	<ul style="list-style-type: none"> Person in charge of business Can be undertaken by people who assume other roles. 	<ul style="list-style-type: none"> Pool the team’s internal and external resources Communicate with multiple parties including departments in universities or colleges, enterprises established by alumni, and local industry parks, prepare and improve business plans, seek partners through various channels, provide technical support to the team, and seek sponsorships 	0-1
General Member	Assumes none of the above roles	-	3-32



Apart from the above officially required roles, teams can set up other roles as they deem fit, such as technical team leads or robotic team leads.

2.3 Rule Inquiries

The RMOC can be reached via the following contact channels. The office hours are 10:30 - 12:30 and 14:00 - 19:30 on workdays. For further contact information and Q&A rules of the RMOC, please refer to [RoboMaster Organizing Committee Official Contact Details and FAQ Rules](#).

Table 2-4 Contact Channels

Channel	Contact information
Forum	bbs.robomaster.com
E-mail	robomaster@dji.com
Phone	0755-36383255
WeChat	rmsaiwu Note: When sending a friend request, please indicate “institution name + designation + name”.

3. Season Schedule



The following season schedule is for reference only. The specific time is subject to the latest announcement by the RMOC.

The RMUC 2024 consists of two schedules: the online schedule and the on-site schedule. The RMOC recommends that each team formulate a preparation plan and a robot production budget and plan before the competition to estimate the manpower and funds needed and avoid wasting such resources.

A team has to complete the registration and complete and pass the relevant mandatory sessions before the deadline to qualify for the competition. Teams passing specific sessions of the Technical Assessment will earn a corresponding product educational discount (hereinafter referred to as “product discounts”) provided by the RMOC.

- For more details on the Technical Assessment specifications, please refer to “Appendix 1 - Technical Assessment”.
- For the product discounts applicable to each Technical Assessment session, please refer to the [“RoboMaster 2024 Instructions for Purchasing Materials”](#).

The mandatory sessions for the different teams are as follows:

Table 3-1 Obligatory Sessions for Different Teams

Team Categories	Obligatory Sessions	Descriptions
Tier-1 Teams	Sessions with *	<ul style="list-style-type: none"> ● A Tier-1 Team must complete sessions with * to qualify for the RMUC 2024 Regional Competition. Otherwise, it will be deemed ineligible for the Regional Competition in the current season, and its place will be taken by another Tier-2 Team that has passed the Technical Assessment. ● For Tier-1 Teams, non-completion of sessions without * will not disqualify them from the Regional Competition, but they will lose the benefits from those sessions (product discounts, open-source bonuses, etc).
Tier-2 Teams and teams from Hong Kong, Macau, Taiwan and overseas	All sessions	Tier-2 Teams and teams from Hong Kong, Macau, Taiwan and overseas must complete all sessions to qualify for the RMUC 2024 Regional Competition.

Table 3-2 Online Schedule

Schedule	Session	Applicable Teams	Descriptions
October 18, 2023, 18:00 - November 15, 2023, 18:00	* Registration on RoboMaster Official Website	Teams from mainland China	Log in the RoboMaster website and complete the registration as required.
October 25, 2023, 18:00 - November 15, 2023, 18:00		Teams from Hong Kong, Macau, Taiwan and overseas	
November 24, 2023, 18:00 - November 25, 2023, 18:00	Technical Assessment – Rules Exam	Teams from mainland China	<ul style="list-style-type: none"> ● Eligible to the product discounts corresponding to the session. ● Eligible to the Season Plan session.
		Teams from Hong Kong, Macau, Taiwan and overseas	
December 4, 2023, 18:00 - December 6, 2023, 18:00	*Technical Assessment – Season Plan	Teams from mainland China	<ul style="list-style-type: none"> ● Eligible to product discounts corresponding to the session. ● Eligible to the Referee System Exam session
		Teams from Hong Kong, Macau, Taiwan and overseas	
January 12, 2024, 18:00 - January 13, 2024, 18:00	*Technical Assessment – Referee System Exam	Teams from mainland China	Eligible to the Mid-Term Progress Assessment session
		Teams from Hong Kong, Macau, Taiwan and overseas	
February 26, 2024, 18:00 - February 28, 2024, 18:00	Technical Assessment – Mid-Term Progress Assessment	Teams from mainland China	<ul style="list-style-type: none"> ● Eligible to borrowing a set of the Standard, Hero/Standard, and Sentry Referee Systems ● Eligible to the Final Robot Assessment
		Teams from Hong Kong, Macau, Taiwan and overseas	

			Note: Teams participating in the RMUL 2024 3V3 Match and that have passed this session are allowed to claim no more than one set of Referee System.
April 1, 2024, 18:00 - April 3, 2024, 18:00	*Technical Assessment - Final Robot Assessment	Teams from mainland China	<ul style="list-style-type: none"> ● Eligible to borrowing a full set of Referee System ● Eligible to the competition feedback session <p>Note: The score received for the Project Documents and Technical Proposal will affect the team’s initial gold coin quantity for each round during the Regional Competition.</p>
June 10, 2024, 18:00 - June 12, 2024, 18:00		Teams from Hong Kong, Macau, Taiwan and overseas	
April 15, 2024, 18:00 - April 17, 2024, 18:00	* Competition Feedback	Teams from mainland China	Teams may choose their divisions or accept the arrangements of the RMOC. The RMOC will decide which teams have priority in their choice of competition venue and are qualified for the on-site competition, based on the region in which their college or university is located and their rankings of the Score and Rank Chart.
June 21, 2024, 18:00 - June 23, 2024, 18:00		Teams from Hong Kong, Macau, Taiwan and overseas	
June, 2024	*Technical Assessment – Regional Competition Season Summary	Teams from mainland China that have failed to advance from the Regional Competition	Eligible to the Regional Competition certificates and prizes

<p>August, 2024</p>	<p>*Technical Assessment – Final Tournament Season Summary</p>	<p>Teams from mainland China, and from Hong Kong, Macau, Taiwan and overseas advancing from the Regional Competition</p>	<p>Eligible to the Final Tournament certificates and prizes</p>
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Table 3-3 On-Site Schedule

Schedule	Item	Applicable Teams	Eligibility
<p>May – June, 2024</p>	<p>Regional Competition (mainland China division)</p>	<p>Teams from mainland China</p>	<ul style="list-style-type: none"> ● Tier-1 Teams will be eligible to the Regional Competition once they pass the obligatory sessions of the Technical Assessment prior to the competitions. ● Tier-2 Teams will qualify for the Regional Competition once they have passed all sessions of the Technical Assessment prior to the competition.
<p>July – August, 2024</p>	<p>Regional Competition (International division)</p>	<p>Teams from Hong Kong, Macau, Taiwan and overseas</p>	<p>Teams from Hong Kong, Macau, Taiwan and overseas who have successfully completed all Technical Assessment sessions before the Regional Competition are qualified for this session. Note: The RMOC may adjust arrangements for on-site competitions based on the actual participation situation of participating teams from Hong Kong, Macau, Taiwan and overseas.</p>

<p>July – August, 2024</p>	<p>Wild Card Competition</p>	<p>Teams from mainland China</p>	<p>Teams from mainland China advancing from the Regional Competition (mainland region) are qualified for this session.</p>
<p>July – August, 2024</p>	<p>Final Tournament</p>	<p>Teams from mainland China; teams from Hong Kong, Macau, Taiwan and overseas</p>	<p>Teams that have successfully completed the Regional Competition and Wild Card Competition are qualified for this session.</p>

4. Competition System

The official matches of RMUC 2024 consist of two stages: the Group Stage and the Knockout Stage. The Group Stage follows the BO2 or BO3 format, while the Knockout Stage BO3 or BO5. In the Regional Competition of RMUC 2024, the Group Stage adopts the Swiss System and BO3 format, while the Knockout Stage the single elimination system and BO3 or BO5 format.



The competition systems of the Wild Card Competition and Final Tournament of RMUC 2024 are to be determined.

In the Group Stage, participating teams are divided into two groups, each going through three rounds of matches following the Swiss System. Within each group, the participating teams will compete according to the results of a draw and matches will be organized according to the schedule. In the following rounds, every two closest ranked teams meet. For example, the first-place team competes against the second-place team and the third-place team against the fourth-place team.

In the Group Stage (BO3 matches), the participating teams are ranked in the following order:

Table 4-1 Scoring Rules for the Group Stage

Competition Result	Point	Note
2:0	1:0	The winning team gets 1 point.
2:1	1:0	

1. The team with the higher number of total points ranks higher.
2. If two teams have the same total points, the team with the higher rival score ranks higher.
3. If two teams have the same rival score, the team with the higher average round Net Base HP ranks higher.
4. If two teams have the same average round Net Base HP, the team with the higher average round Net Outpost HP ranks higher.
5. If two teams have the same average round Net Outpost HP, the team with the higher average round Damage HP ranks higher.
6. If two or more teams still tie for the same place according to these criteria, the RMOC will arrange a playoff match on a round-robin basis.

- The “rival score” of a team refers to the total number of wins minus the total number of losses of all the opposing teams that the team has competed against. For example, Team A has competed against Team B and Team C at the end of the second round of matches. In the past two rounds, the results of Team B are 2:1 and 2:0, respectively, while those of Team C are 1:2 and 1:2, respectively. The “rival score” of team A is calculated as follows: $(2+2+1+1)-(1+0+2+2) = 6-5 = 1$.
- If Team R, which is the opponent of Team E, quits or is declared lost before the match begins, then the result of Team E in this match is 2:0. The result of Team R in this round will not be included in the calculation of the rival score of Team E. Instead, Team R’s result will be replaced with that of the team with the largest difference between the total number of wins and the total number of losses by the end of this round.



For example, there is a group of eight teams. By the end of the second round, the results of Team T are 2:0 and 2:0, the results of Team W are 2:0 and 2:1, the results of Team E are 0:2 and 2:0, and the results of Team R are 0:2 and 0:2. Team E competes against Team W in the first round and against Team R in the second round. However, Team R is declared lost before the match begins. Then, the rival score of Team E after the second round is calculated as follows: $(2+2+2+2)-(0+1+0+0)=7$. The result of Team T is used to replace that of Team R.

5. Awards

This chapter sets out the awards structure for the RMUC 2024.



- The names of the awards are subject to further adjustments and the actual certificates issued shall prevail.
- The number of awards for the Regional Competitions and Final Tournament applies to the mainland China division, while the awards for the International division will be adjusted according to the number of its participants.
- The judging criteria for the Open Source Awards, Organization Awards, Robot Combat Awards, Best Design Creativity Awards, Annual Technical Breakthrough Awards, Outstanding Contribution Awards, and RM Awards can be found in “Appendix 2 Award Criteria”.

5.1 Regional Competition Awards

The Regional Competition Awards are as follows:

Table 5-1 Regional Competition Awards

Prize	Ranking	Quantity	Awards
Regional First Prize	Regional Champion: 1st in the region	1 per region	<ul style="list-style-type: none"> ● Champion trophy ● Regional first prize certificate ● Cash prize of RMB 30,000 (pre-tax)
	Regional First Runner-up: 2nd in the region	1 per region	<ul style="list-style-type: none"> ● First runner-up trophy ● Regional first prize certificate ● Cash prize of RMB 30,000 (pre-tax)
	Regional Second Runner-up: 3rd in the region	1 per region	<ul style="list-style-type: none"> ● Second runner-up trophy ● Regional first prize certificate ● Cash prize of RMB 30,000 (pre-tax)
	Regional Third Runner-up: 4th in the region	1 per region	<ul style="list-style-type: none"> ● Regional first prize certificate ● Cash prize of RMB 30,000 (pre-tax)
	Regional 5th – 8th place	4 per region	<ul style="list-style-type: none"> ● Regional first prize certificate

Prize	Ranking	Quantity	Awards
			<ul style="list-style-type: none"> ● Cash prize of RMB 15,000 (pre-tax)
	Regional 9th – 16th place	8 per region	<ul style="list-style-type: none"> ● Regional first prize certificate ● Cash prize of RMB 8,000 (pre-tax)
Regional Second Prize	Regional 17th – 32nd place	16 per region	Regional second prize certificate

5.2 Final Tournament Awards

The Final Tournament Awards are as follows:

Table 5-2 Final Tournament Awards

Prize	Ranking	Quantity	Awards
National First Prize	Champion: First place	1	<ul style="list-style-type: none"> ● Champion trophy ● Champion medal ● First prize certificate ● Cash prize of RMB 150,000 (pre-tax)
	First Runner-up: Second place	1	<ul style="list-style-type: none"> ● First runner-up trophy ● First runner-up medal ● First prize certificate ● Cash prize of RMB 150,000 (pre-tax)
	Second Runner-up: Third place	1	<ul style="list-style-type: none"> ● Second runner-up trophy ● Second runner-up medal ● First prize certificate ● Cash prize of RMB 150,000 (pre-tax)
	Third Runner-up: Fourth place	1	<ul style="list-style-type: none"> ● First prize certificate ● Cash prize of RMB 150,000 (pre-tax)
	5th to 16th place	12	<ul style="list-style-type: none"> ● First prize certificate

Prize	Ranking	Quantity	Awards
			<ul style="list-style-type: none"> ● Cash prize of RMB 30,000 (pre-tax)
National Second Prize	17th to 32nd place	16	<ul style="list-style-type: none"> ● Second prize certificate ● Cash prize of RMB 10,000 (pre-tax)
	Teams that have advanced from the Regional Competition to the Wild Card Competition and have not advanced to the Final Tournament	Several winners	Second prize certificate
National Third Prize	Teams from mainland China that have won the First Prize in the Regional Competition but could not advance to the Final Tournament	Several winners	Third prize certificate
	17th to 32nd place in each region	48	Third prize certificate

5.3 Open Source Awards

Teams applying for the Open Source Awards are required to have made their core technologies or operation management approaches open-source during the RM2024 season (Oct 18, 2023 to Aug 30, 2024) on [bbs.robomaster](https://bbs.robomaster.com) and robomaster.com, for the purposes of promoting technical development at the RoboMaster University Championship and the innovative culture and spirit of engineers.



- There is no fixed number of Open Source Awards, and the RMOC will rank them according to the coverage and quality of the submitted open-source solutions (including but not limited to aspects such as software, hardware, and mechanical). If there are no open-source projects of an outstanding nature, no winner will be announced for the Open Source Grand Prize. But if there is more than one outstanding open-source project, the Grand Prize may be awarded to multiple winners.
- The top four teams in the Final Tournament must share their robot information and seasonal summary required by the RMOC as open-source content in accordance with the relevant rules and specifications. Otherwise, the payment of the cash prizes may be affected. The RMOC will add more Open Source Awards depending on the actual open source situation.

The Open Source Awards are as follows:

Table 5-3 Open Source Awards

Prize	Quantity	Awards
Open Source Grand Prize	Several winners	<ul style="list-style-type: none"> ● Award certificate (for teams) ● RMB 100,000 (pre-tax)
Open Source First Prize	Several winners	<ul style="list-style-type: none"> ● Award certificate (for teams) ● RMB 50,000 (pre-tax)
Open Source Second Prize	Several winners	<ul style="list-style-type: none"> ● Award certificate (for teams) ● Cash prize of RMB 15,000 - 30,000 (pre-tax), awarded based on an overall assessment of the open-source materials
Open Source Third Prize	Several winners	<ul style="list-style-type: none"> ● Award certificate (for teams) ● RMB 10,000 (pre-tax)
Open Source Outstanding Prize	Several winners	<ul style="list-style-type: none"> ● Award certificate (for teams) ● Cash prize of RMB 2,000 - 5,000 (pre-tax), awarded based on an overall assessment of the open-source materials

5.4 Organization Awards

The Organization Awards are as follows:

Table 5-4 Organization Awards

Prize	Quantity	Awards
Rookie Award	No more than 5 teams	<ul style="list-style-type: none"> ● Award certificate (for teams) ● Cash prize of RMB 5,000 (pre-tax)
Mainstay Award	No more than 5 teams	<ul style="list-style-type: none"> ● Award certificate (for teams) ● Cash prize of RMB 5,000 (pre-tax)
Competitive Spirit Award	No more than 5 teams in the season	<ul style="list-style-type: none"> ● Award certificate (for teams) ● Cash prize of RMB 5,000 (pre-tax)
Cost Control Award	No more than 5 teams	<ul style="list-style-type: none"> ● Award certificate (for teams) ● One GM6020 brushless DC motor worth RMB 899
Top Tactician Award	No more than 5 teams	<ul style="list-style-type: none"> ● Award certificate (for teams) ● Cash prize of RMB 5,000 (pre-tax)

Prize	Quantity	Awards
Discipline Building Award	No more than 5 teams	<ul style="list-style-type: none"> ● Award certificate (for teams) ● Cash prize of RMB 5,000 (pre-tax)
Best Season Schedule Award	No more than 10 teams	<ul style="list-style-type: none"> ● Award certificate (for teams) ● The top two teams will receive a set of Standard Referee System (excluding the Video Transmitter Module) worth RMB 5,033; teams ranked 3rd to 10th place will receive one GM6020 brushless DC motor and one battery rack.
Best Technical Report Award	No more than 5 teams	<ul style="list-style-type: none"> ● Award certificate (for teams) ● Cash prize of RMB 3,000 (pre-tax)

5.5 Robot Combat Awards

The number of awards will be calculated according to the ratios listed below, based on the selection criteria and the number of teams participating in the Regional Competition. If the result is a decimal number, it should be rounded up to an integer.

The Robot Combat Awards are as follows:

Table 5-5 Robot Combat Awards

Awards	Descriptions
Robot Type	Standard, Engineer, Hero, Aerial, Sentry, and Dart System:
Quantity	<ul style="list-style-type: none"> ● First prize: approx. 15% ● Second prize: approx. 25% ● Third prize: Several winners <p>Note: The number of different awards given for each robot type shall be adjusted based on the actual number of teams eligible for the awards and the performance of each robot in the competition.</p>
Awards	Award certificate (for teams)

5.6 Best Design Creativity Awards

Recipients of the Best Design Creativity Awards are required to share their design insights, and the submitted materials will be revealed in the judge’s remarks.

The Best Design Creativity Awards are as follows:

Table 5-6 Best Design Creativity Awards

Prize	Quantity	Awards
Best Design Creativity Awards	No more than 10 winners	<ul style="list-style-type: none"> ● Award certificate (for teams) ● RMB 1,500 (pre-tax)

5.7 Annual Technical Breakthrough Awards

The winners of the Annual Technical Breakthrough Awards must share their relevant robot types and season summary as open-source content in accordance with the rules and specifications. Otherwise, the payment of the cash prizes may be affected. The RMOC will add more Open Source Awards depending on the actual open source situation (with the prize money to be based on the highest award).

Table 5-7 Annual Technical Breakthrough Awards

Prize	Quantity	Awards
First Prize	No more than 1 for each robot type	<ul style="list-style-type: none"> ● Award certificate (for teams) ● RMB 15,000 (pre-tax)
Second Prize	No more than 2 for each robot type	<ul style="list-style-type: none"> ● Award certificate (for teams) ● RMB 10,000 (pre-tax)
Third Prize	No more than 3 for each robot type	<ul style="list-style-type: none"> ● Award certificate (for teams) ● RMB 5,000 (pre-tax)

5.8 Outstanding Contribution Awards

Winners of Outstanding Supervisor Award, Outstanding Captain (Team) Award, and Outstanding Project Manager Award are required to submit a personal work summary and experience description within one month after the selection result is announced and are obligated to participate in the sharing sessions and surveys conducted by the RMOC. Winners of Outstanding Business Group Award are required to submit a personal work summary and experience description within one month after the selection result is announced.

The Outstanding Contribution Awards are as follows:

Table 5-8 Outstanding Contribution Awards

Prize	Quantity	Awards
Outstanding Supervisor	No more than 10 winners in total for this season	<ul style="list-style-type: none"> ● Award certificate (for individuals) ● Cash prize of RMB 8,000 (pre-tax)

Prize	Quantity	Awards
Outstanding Captain (Team)	No more than 8 winners in total for this season	<ul style="list-style-type: none"> ● Award certificate (for individuals) ● Cash prize of RMB 5,000 (pre-tax)
Outstanding Project Manager	No more than 8 winners in total for this season	<ul style="list-style-type: none"> ● Award certificate (for individuals) ● Cash prize of RMB 5,000 (pre-tax)
Outstanding PR Team	No more than 8 winners in total for this season	<ul style="list-style-type: none"> ● Award certificate (for teams) ● Cash prize of RMB 3,000 (pre-tax)
Outstanding Business Team	No more than 8 winners in total for this season	<ul style="list-style-type: none"> ● Award certificate (for teams) ● Cash prize of RMB 3,000 (pre-tax)
Outstanding Advisor	No more than 8 winners in total for this season	<ul style="list-style-type: none"> ● Award certificate (for individuals) ● Cash prize of RMB 3,000 (pre-tax)
Outstanding Volunteer	<ul style="list-style-type: none"> ● No more than 10 winners per region ● No more than 15 winners for the Final Tournament 	Award certificate (for individuals)

5.9 RM Awards

The RM Awards recognize and reward outstanding team members who are at the forefront of technical innovation and breakthroughs.

There is no fixed number of RM Awards, and the RMOC will assess candidates according to their submitted materials and interview performance.

Table 5-9 RM Awards

Prize	Quantity	Awards
RM Awards	Several winners	<ul style="list-style-type: none"> ● Award certificate (for individuals) ● Cash prize of RMB 8,000 (pre-tax) ● Invitation to a job interview

Appendix 1 Technical Assessment

The Technical Assessment allows teams to demonstrate their technical skills and guides them in their plans and preparations as well as development based on previous experience. It also offers an opportunity for team members to polish their skills, including requirements analysis, budgeting, data analysis and report drafting. All teams must complete a Technical Assessment in accordance with the requirements of the RMOC and within the time specified.

The Technical Assessment of RMUC 2024 mainly consists of six sessions: Rules Exam, Season Plan, Mid-Term Progress Assessment, Referee System Exam, Final Robot Assessment, and Season Summary. The latest tasks and requirements relating to each session of the Technical Assessment shall be based on [announcements on the official website](#). For the schedules of each session, please refer to “3 Season Schedule”.

In addition, the Aerial Robot operators must qualify as pilots to be able to fly their robots and receive Projectile Allowance. If the pilot fails any of the assessments, no Aerial Robot in the team can be flown and launch projectiles, but the team and this pilot will remain qualified. The tasks and requirements for the Pilot Assessments will later be published on robomaster.com.

Below are the specifications for the video and other files to be submitted for the Technical Assessment:

Appendix Table 1 Submission Specifications

Document Type	Specification
Text	<ul style="list-style-type: none"> ● Format: PDF ● Font: SimSun (Chinese) or Times New Roman (English), 12 pt ● Line spacing: 1.5 ● File naming format: Institution name + team name + file name
Table/Form	<ul style="list-style-type: none"> ● Format: Excel ● Font: SimSun (Chinese) or Times New Roman (English), 11 pt ● Table format: Wrap Text, AutoFit Row Height and Column Width ● Alignment: Vertical center, horizontal left or center, unless otherwise specially requested
Slides	<ul style="list-style-type: none"> ● Format: PPT ● Font: SimSun (Chinese) or Times New Roman (English), 24 pt ● Content: <ul style="list-style-type: none"> ➤ Each slide must have a title to summarize the content ➤ Display all content in Normal View and avoid using animations that require to play the slides ● File size: Max. 300 M

Document Type	Specification
Video	<ul style="list-style-type: none"> ● Resolution: 720p ● Upload method: Upload the video to Youtube and submit the video link. A viewing password may be set. ● Content: <ul style="list-style-type: none"> ➤ Subtitles or commentaries should be included to explain each process in the video. ➤ Only relevant content should be shown, with the video well-paced and its duration kept within the maximum length.

A. Rules Exam

The scope of the Rules Exam includes: [“RoboMaster 2024 University Championship Rules Manual”](#), [“RoboMaster 2024 University Championship Participant Manual”](#) and [“RoboMaster 2024 University Series Robot Building Specifications Manual”](#) and relevant competition terms and requirements.

B. Season Plan

Chance for submission: 1

Passing criteria: Scored top 45% or higher

Content to be submitted and requirements:

- Season Plan: PDF format, without word limit
- Progress Report: Excel format
- Budget Report: Excel format

Appendix Table 2 Season Plan Assessment Requirements

Content	Section	Content	Score
Season Plan	Team goals	Organize team discussions and set and explain the team's goals for each robot type and technical area in this season based on the team's experience summary of the last season, including but not limited to technical breakthroughs, team members' development, planning and operation, competition results, etc.	5
	Project analysis	<ol style="list-style-type: none"> 1. Study and interpret the rules of the new season, analyze the requirements for the designing of each robot, and write down the ideas. 2. Based on the robot categories and technical directions, share open-source resources, user manuals of the materials, as well as other resources and literature (including but not limited to online video, industrial standards, etc.). 3. Explain the new technical points the team is planning to develop in this new season based on the above requirements analysis, as well as existing technical points that need to be optimized or enhanced (technical points and existing technical points should be explained separately); specify the goals for each of the above points, i.e. the results the team aims to achieve with the new technical points and the projected quantitative performance indicators after the existing technical points are optimized. Open-source materials or literature referenced during the research may also be included as notes. 	50
	Team structure	<ol style="list-style-type: none"> 1. Define the overall structure of the team, clarify the hierarchical relationships and connections between all positions and groups, and clarify the manpower invested in all robot types and technical areas. 2. Specify the responsibilities and functions for each position. 	10

Content	Section	Content	Score
		<ol style="list-style-type: none"> 3. Specify the profiles and number of candidates to be recruited for the vacancies. 4. Specify the overall plan for team culture building and legacy development (including the training of new members and sorting out legacy technical files/drawings/codes). 	
	Resource availability analysis	<ol style="list-style-type: none"> 1. Analyze the available resources (funds, materials and manufacturing resources). This should be a recapitulative description. Figures should be included in the team’s budget report. 2. Plan the investment of the currently available resources and analyze whether current resources can support R&D plans. 	10
	Business and promotional plan	Sponsorship and publicity planning	10
	Progress Report	<ol style="list-style-type: none"> 1. Specify the plan and timeline for robot building progress and acceptance check based on robot types and technical areas. The Mid-Term Progress Assessment includes a closed-loop acceptance check on the implementation of the corresponding part of the plan. 2. The schedule for the completion of other tasks (such as site set-up, tool commissioning, etc.) 3. Manpower distribution plan (the number of people and time to be allocated for each module). 	15
	Budget Report	<p>Prepare a well-founded budget plan according to funds that can be acquired, the expenses involved in the competition (the cost report from the previous season may be referred to), and the R&D plans for this year.</p> <p>Note: The categorization should be exhaustive and clear; the budget for robot development and lab management should be reasonable and specific.</p>	10
	Team Culture	Organize team discussions and record the conclusions.	10

Content	Section	Content	Score
		<ol style="list-style-type: none"> 1. Team's perception and interpretation of the competition's content and culture; 2. Present concrete proposals for building the team's culture (goals, timeline, plan execution, etc.) 	

C.Mid-Term Progress Assessment

Chance for submission: 1

Passing criteria: All teams will be ranked according to their final score. A certain proportion of the top-ranked teams will pass this session.

Content to be submitted and requirements:

- Mid-Term Robot Presentation: Video and PowerPoint file.
- Progress Report (updated): Excel format.

Appendix Table 3 Mid-Term Progress Assessment Requirements

Content	Section	Content	Score
		<ol style="list-style-type: none"> 1. To show the plan and progress of each robot category with proof and evidence including video clips. For details, please refer to "RoboMaster 2024 University Series Progress Assessment Criteria". 2. A key vision backdrop of the current season is required in the submitted video clips. Please stay tuned for a subsequent announcement about specific requirements. 	-
		<ol style="list-style-type: none"> 1. Update the progress of the robot-building plan, perform closed-loop acceptance checks at key stages in the season plan, analyze the reasons, and update the subsequent plan accordingly. 2. Provide a schedule for the completion of other tasks (such as site set-up, tool debugging, etc.) 3. Update the manpower distribution plan (the number of people and time to be allocated for each module). 	80

D. Referee System Exam

The scope of the Referee System Exam includes [RoboMaster Referee System User Manual](#) and documents related to the Referee System.

E. Final Robot Assessment

Chance for submission: 1

Passing criteria: The teams will be ranked according to their Final Robot Assessment scores. A certain proportion of the top-ranked teams will advance from this round.

Content to be submitted and requirements:

- Final Robot Presentation: Video and PowerPoint file
- Technical Proposal: PDF format
- Project Documents:
 - Cost Report: PDF format
 - Expenditure Record: Excel format
 - Robot BOM Record: Excel format



The scores of “Project Documents” and “Technical Proposal” in the Final Robot Assessment will impact the team’s initial Gold Coin quantity during the Regional Competition. The corresponding relationship between the impact and each score will be updated in a later version.

Appendix Table 4 Final Robot Assessment Requirements

Content	Section	Content might be included	Score
Final Robot Presentation		<ul style="list-style-type: none"> To show the progress of each robot category with proof and evidence including video clips. For details, please refer to “RoboMaster 2024 University Series Progress Assessment Criteria”. A key vision backdrop of the current season is required in the submitted video clips. Please stay tuned for a subsequent announcement about specific requirements and download the file in time. 	-
	Technical Proposal	Detailed descriptions of the robots’ design concepts, technical proposal, brief outline of tactical positioning, etc. The specific details and templates to be updated later.	100
Project Documents	Cost Report	<ol style="list-style-type: none"> Introduce in detail the budget status, budget amount, budget already spent, and the subsequent budget plans for the current season. Analyze in depth the reasons of irregular budget status (overrun/surplus) based on the references including the Expenditure Record and “Team Budget” in the Season Plan session. Put forward solutions based on the analysis. 	40
	Expenditure Record	<p>Make a record of the team’s expenditures, including detailed information such as the types and amount of the expenses.</p> <p>Note: The record should be thorough and clear, in which the costs are traceable and should be analyzed.</p>	30
	Robot BOM Record	Record the robot parts that are currently available in full and in detail. Divide them into modules for a clearer view.	30

F. Season Summary

Chance for submission: 1

Passing criteria: Scored top 45% or higher

Content to be submitted and requirements:

- Technical Report: PDF format
- Season Summary: PDF format

Appendix Table 5 Season Summary Assessment Requirements

Content	Area	Content	Score
Season Summary	Technical Report	Update and optimize the content based on some details in the technical proposal in the Final Robot Assessment. The specific details and templates to be updated later.	50
	Team-building Analysis	Perform a post-mortem after the competition, and review the competition outcome against the team’s goals in terms of technical breakthroughs, planning and execution, match results, and other areas, analyze any actual discrepancy and its reasons, and conclude useful experiences from the building and management of the team.	5
	Project Analysis	Review the team’s understanding of the rules and functional requirements for each robot type in its season plan, analyze any discrepancy and the reasons therefor, and conclude useful experiences from the team’s interpretation of the rules and analysis of robot requirements.	30
	Team Structure Overview	Provide the team’s framework and member structure, compare the team’s composition at the start and during the competition, analyze the reasons for members’ departure, and conclude useful experiences from the building of the team as well as training and retention of new members.	10
	Post-mortem of Basic Tools and Resources	<ol style="list-style-type: none"> Review the resources and tools actually used against the available resources and tools, analyze any actual discrepancy and its reasons, and conclude useful experiences from the team’s utilization of resources and tools. Organize and list out the materials and references used in the preparation period. 	20

Content	Area	Content	Score
		3. Review the actual outcomes of the team’s project analysis, resource availability analysis, and progress plan against their expected outcomes, analyze any actual discrepancy and its reasons, and conclude useful experiences.	
	Team Rules and Regulations	Review the team’s charter and rules formulated in this season, list out rules that were implemented and those that were mere formalities, analyze the reasons for such discrepancies, and conclude useful experiences from the administration of the rules.	10
	Academic Innovation	List the academic references used for the competition, including patents, papers, open-source technical literature, etc. The amount of references provided will be taken into consideration in the assessment	15
Culture-building Analysis		<ol style="list-style-type: none"> Detail how the team has built its culture this season, including a survey of cultural awareness within the team, a survey and analysis of cultural understanding, and actions taken to build culture. Review the culture-building plan and goals for the whole season, analyze any discrepancy between desired outcomes and the actual situation and the reasons behind, provide constructive advice for culture building, and clarify the focus of culture building for the future. 	10

Appendix 2 Award Criteria

Individual winners or team winners of each award are required to share their experiences relevant to the award.

A. Open Source Awards

1. Selection Criteria

The RMOC will score the open source materials according to the following two criteria: basic format and content. For the selection criteria, see [“RoboMaster University Series Open Source Awards Rules and Selection Criteria”](#).

2. Application Process

1. Teams from mainland China are required to upload their open-source files to the relevant session in “Forum - Share technical/operational content”, while teams from Hong Kong, Macau, Taiwan and overseas should send their files to robomaster@dji.com, and name their files in this format: RM2024 + School Name + Team Name + Open Source Category + Content Description.
2. To apply, teams are required to complete a questionnaire (to be provided later).
3. The RMOC will assess and select the winners based on the application questionnaires and the quality of the open-source content submitted by the teams.



1. The engineering processes involved in the software segment must be uploaded to github and set as public.
 2. The engineering files in the mechanical and hardware direction need to be uploaded to the Baidu network disk.
-

B. Organization Awards

Appendix Table 6 Organization Awards Selection Criteria

Prize	Selection Criteria	Selection Method
Rookie Award	<ul style="list-style-type: none"> ● The team has qualified for the Regional Competitions for three consecutive years (including the current season) ● The result of the current season is at least one level higher than that of the past season 	<ul style="list-style-type: none"> ● The team with more overall progress will be given priority for the award ● Performance level: <ol style="list-style-type: none"> 1. Regional Competition Second Prize/Final Tournament Third Prize 2. Final Tournament Second Prize 3. Final Tournament First Prize 4. Final Tournament Champion, First Runner-up, Second Runner-up
Mainstay Award	<p>The team participated for three consecutive years (including the current season), advanced to the Final Tournament in the 2022 season, won the 8th-32nd place in the Final Tournament in the 2023 season, and won the 8th-32nd place in the Final Tournament in the 2024 season.</p>	<p>Teams with a longer participation experience and better scores will be given priority</p>
Competitive Spirit Award	<ul style="list-style-type: none"> ● The team displays a good competitive spirit, with no serious violations of competition rules and proper standards of conduct. ● The team is active in forums, WeChat groups, etc., and interacts well with the RMOC, volunteers, and other teams. 	<ul style="list-style-type: none"> ● Selections to be made according to the feedback given by the staff of the RMOC, other teams, and volunteers of the competition. ● Teams with more positive feedback from the RMOC staff, other teams, and event volunteers will be given priority.

Prize	Selection Criteria	Selection Method
	<ul style="list-style-type: none"> The team is helpful, active and an open source of information for others, enthusiastically sharing their experience and willing to provide resources to other teams. 	
<p align="center">Cost Control Award</p>	<ul style="list-style-type: none"> Cost data is clear and complete and can reflect the cost overview or the result of cost control. Cost control schemes and methods are highly executable. During the match preparation stage, actively open source the effective and replicable cost control method and case 	<ul style="list-style-type: none"> Score of cost-relevant content in each Technical Assessment session. After the RoboMaster forum becomes open source, teams are required to submit materials for appraisal, such as cost reports, etc.
<p align="center">Top Tactician Award</p>	<ul style="list-style-type: none"> The team displays a good competitive spirit, with no serious violations of competition rules and proper standards of conduct. The team achieves good team results via tactical operations. The team’s tactics are instructive to other participating teams, having a positive impact on the overall performance of the event. 	<ul style="list-style-type: none"> The team submits assessment material, like tactics development process, performing the action related to tactics (Operator training), etc. The RMOC selects the best according to competition performance and materials.
<p align="center">Academic Achievement Award</p>	<p>The team publishes papers or other academic achievements related to the technology used in the competitions during the 2024 season.</p>	<ul style="list-style-type: none"> The team submits assessment materials, such as relevant patent files, papers, etc. The RMOC selects the best according to materials.

Prize	Selection Criteria	Selection Method
Best Season Schedule Award	The team should open up their current season plans and gain the top-ranking score of this session in the technical assessment among all open source teams.	<ul style="list-style-type: none"> ● The team is required to complete a questionnaire to apply. ● The RMOC will collect the open source materials from the RoboMaster forum and select the winners based on the rankings. <p>*The open source posts should be named in the format of [Season Plan + College Name Team Name + RM2024 Season Plan Open Source]</p>
Best Technical Report Award	The team should open up their technical reports of this session in the Season Summary of the current season and gain the top-ranking score among all open source teams.	<p>The RMOC will collect the open source materials from the RoboMaster forum and select the winners based on the rankings.</p> <p>*The open source posts should be named in the format of [Technical Report + College Name Team Name + RM2024 Technical Report Open Source]</p>

C. Robot Combat Awards

Each robot type is ranked in accordance with the data selected from their performance in the competition. Robots that are qualified and meet the minimum eligibility requirements for the award must fulfill the inspection criteria. The number of winners selected will depend on a specific ratio against the total number of candidates.



The data is selected from the Regional Competitions.

Appendix Table 7 Selected Robotic Data

Robot Type	Selected Data Type
Standard Robots	Average level of damage and hit ratio in each round
Engineer Robots	Average points from redeemed minerals in a round (1 point is awarded for obtaining 100 gold coins by exchanging minerals)
Hero Robots	Average level of damage and hit ratio in each round
Aerial Robots	Average level of damage per Air Support

Robot Type	Selected Data Type
Sentry Robot	Average level of damage and hit ratio in each round
Dart System	Scores from average target hits in a round (1 point for hitting the Outpost, 5 points for a fixed target of the Base, and 20 points for a random target of the Base)

D. Best Design Creativity Awards

a) Selection Criteria

The Best Design Creativity Award considers various aspects, such as the appearance design, structural design, functional innovation, etc. of a single type or fleet of robots. Teams with design creativity in any direction can apply for this award.

Appendix Table 8 Best Design Creativity Awards Selection Criteria

Reference Dimension	Selection Criteria
Aesthetics	The robot is creatively designed, with overall aesthetic appearance, strong styling or rich details.
Innovation	The robot has a novel structure and is highly innovative. It can solve unconquered tasks or solve familiar tasks with new methods.
Practicality	The robot is highly practical and extremely efficient, and its actual combat performance ranks higher among similar robots in the current season.
Influence	The robot has great influence on participating teams and is widely used for reference.

b) Selection Process

Teams that wish to apply for the Best Design Creativity Award are required to adhere to the following process:

1. Teams must first submit an application questionnaire (to be updated).
2. The judging panel of the RMOC shall then score the robots of the participating teams.

E. Annual Technical Breakthrough Awards

a) Selection Criteria

The team designs the robots based on theories, performs excellently in competitions, and achieves technological innovation and breakthroughs.

b) Selection Process

The RMOC will score and rank the teams based on the project analysis session of their Season Plan and the Technical Report of their Season Summary and select the First, Second and Third Prize winners based on their performance in the competition.

F. Outstanding Contribution Awards

Appendix Table 9 Outstanding Contribution Awards Selection Criteria

Prize	Selection Criteria	Selection Method
<p>Outstanding Supervisor</p>	<ul style="list-style-type: none"> ● The team displays a good competitive spirit, with no serious violations of competition rules and proper standards of conduct. ● The supervisor guides the team and instills team culture, displays a high sense of responsibility, takes care of each team member, promotes the growth and development of students in the field of competition, and is deeply revered by students ● The supervisor actively open up employment opportunities for outstanding team members by submitting CVs of the nominated talent to RMOC. 	<ul style="list-style-type: none"> ● To apply for this award, teams are required to complete a questionnaire (to be updated). ● After the application is submitted, the RMOC will select the winners based on their submitted questionnaires.
<p>Outstanding Captain (Team)</p>	<ul style="list-style-type: none"> ● The team displays a good competitive spirit, with no serious violations of competition rules and proper standards of conduct. 	<ul style="list-style-type: none"> ● To apply for this award, teams are required to complete a questionnaire (to be updated). ● After the application is submitted, the RMOC will select the winners based on their submitted questionnaires. ● Performance level: <ol style="list-style-type: none"> 1. Regional Competition Third Prize

	<ul style="list-style-type: none"> ● The Captain leads the team and assumes the main responsibility for the team's work. The Captain reasonably sets the direction and goals for the team's development, plans key technology paths, leads team members to overcome technical difficulties, and makes decisions on major issues. ● The Captain plans effective resources within the team and properly allocates tasks to ensure efficient completion of tasks. ● The Captain shows a strong sense of belonging toward the competition and their team, endeavors to build a positive culture and values within the team, and focuses on the development and growth of the team members. ● Compared to the past season, the team remains at the same level or has made progress in terms of the final result grade. 	<ol style="list-style-type: none"> 2. Regional Competition Second Prize/Final Tournament Third Prize 3. Final Tournament Second Prize 4. Final Tournament First Prize 5. Final Tournament Champion, First Runner-up, Second Runner-up
<p style="text-align: center;">Outstanding Project Manager</p>	<ul style="list-style-type: none"> ● The team displays a good competitive spirit, with no serious violations of competition rules and proper standards of conduct. 	<ul style="list-style-type: none"> ● To apply for this award, teams are required to complete a questionnaire (to be updated). ● After the application is submitted, the RMOC will select the winners based on their submitted questionnaires.

	<ul style="list-style-type: none"> ● The Project Manager excellently manages the team's projects, effectively coordinating and promoting team members to work in concert, making project schedules, controlling project quality and risks, and communicating to ensure that projects advance as planned. ● The Project Manager assists the Captain in work such as requirement management, version planning, project process formulation and optimization. ● The Project Manager coordinates resources from all parties, effectively solves resource and schedule problems encountered in the project, and concludes useful experience in projects. 	
<p>Outstanding PR Team</p>	<ul style="list-style-type: none"> ● The team displays a good competitive spirit, with no serious violations of competition rules and proper standards of conduct. ● The team submits publicity reports on time, active in planning the team's PR work to increase the team's influence. ● The PR manager is dedicated to building the team's culture. 	<p>The RMOC will select the winners according to the PR team's assessment score ranking and comprehensive performance evaluation</p>
<p>Outstanding Business Team</p>	<ul style="list-style-type: none"> ● The team displays a good competitive spirit, with no serious violations of competition rules and proper standards of conduct. 	<ul style="list-style-type: none"> ● To apply for this award, teams are required to complete a questionnaire (to be updated).

	<ul style="list-style-type: none"> ● The Business Team actively plans the business work within the team, integrates the internal and external resources of the team and locates investment partners through various channels in order to provide technical support and fund sponsorship for the team. 	<ul style="list-style-type: none"> ● After the application is submitted, the RMOC will select the winners according to the Application Form.
<p>Outstanding Advisor</p>	<ul style="list-style-type: none"> ● The team displays a good competitive spirit, with no serious violations of competition rules and proper standards of conduct. ● The Advisor provides constructive and practical suggestions to the team in terms of technological innovation, tactical design, team management, team building, etc., and provides guidance and support to the team in terms of strategy, technology, management, etc. 	<ul style="list-style-type: none"> ● To apply for this award, teams are required to complete a questionnaire (to be updated). ● After the application is submitted, the RMOC will select the winners according to the Application Form.
<p>Outstanding Volunteer</p>	<ul style="list-style-type: none"> ● The volunteers understand, respect and love the RoboMaster and actively cooperate with RMOC. ● The volunteers are diligent and productive, with teamwork spirit and outstanding performance. ● The volunteers never neglect duty, commit any misconduct, or fail in a major way. 	<p>The RMOC staff will make nominations and select the winners based on the nomination materials.</p>

G. RM Awards

a) Selection Criteria

- The candidate's team displays a good competitive spirit, with no serious violations of competition rules and proper standards of conduct.
- The candidate has a deep understanding of technical and theoretical knowledge, uncovers the essence of things, and explores the technical world through hands-on practice.
- The candidate designs the robots based on theories, performs excellently in competitions, achieves technical innovation and breakthroughs, and makes a significant contribution to the team.

b) Selection Process

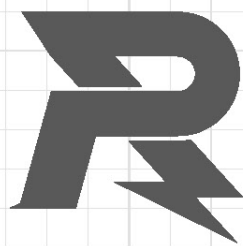
- After the Regional Competition, candidates submit the application materials according to the requirements.
- Upon the receipt of applications, the RMOC will screen the application materials.
- Among candidates who pass the preliminary screening, the RMOC will select the winners according to their interview performance.

Appendix 3 Safety Instructions

Every participant must fully understand and accept that safety is the prerequisite for the sustainable development of the RoboMaster Competitions. In order to protect the rights and interests of all team members and the event organizers, and according to relevant laws and regulations, all team members who have registered for the RoboMaster Competitions will be deemed to have acknowledged and agreed to abide by the following safety terms:

1. All team members who have registered to participate in the RoboMaster competition must confirm that they have full capacity for civil conduct and they are able to build and operate robots independently. They must also make sure that they have read in detail the Registration Guide and Competition Regulations among other important documents stating the rules and regulations of the competition, before starting to use any products by SZ DJI Technology Co., Ltd. to build robots.
2. During the competition, all team members should make sure that their actions including the creation, testing, and use of robots, will not cause any injury or damage to his or her teammates, members of the opposing teams, referees, competition staff, audience, equipment, or the competition area.
3. All teams must ensure that the structural design of their robots will not hinder safety inspection during the Pre-match Inspection and agree to fully cooperate with the Pre-match Inspection carried out by RoboMaster's organizers.
4. The team must guarantee that no fuel-driven engines, explosives, high-pressure gases, or energetic chemicals are used.
5. Throughout the R&D, preparation and competition stages, all team members must pay full attention to potential safety issues, and the team's Supervisors must be responsible for instructing and supervising the team on safety issues.
6. The team must guarantee the safety of all the robots. This includes ensuring the projectile launchers installed on the robots are safe and that they will not cause any harm (either directly or indirectly) to any operators, referees, staff, or audience.
7. The team should take sufficient and necessary safety measures during the R&D, training and competition stages regarding potential accidents. The measures may include keeping the control systems under control, urging the team members to envision the steps before the operation to avoid mistakes or collisions between team members and between team members and robots, forbidding isolated training to ensure there will always be team members to respond to emergencies, wearing goggles and helmets, conducting appropriate locking and adding an emergency stop switch in the robot system during commissioning.
8. Teams will be held responsible for all accidents and losses resulting from the technical faults of robots, loss of control of UAVs or any other unexpected circumstances.

9. The Aerial Robots of participating teams are allowed to fly only above certain restricted areas in competition venues. Therefore, no flight permit is required. To ensure the flight safety of an Aerial Robot, use an aerial safety rope to connect the Aerial Robot to a fixing pile on the ground. If an accident occurs, for example, if the Aerial Robot breaks away from the safety rope, the pilot must stop the motors and land the aerial robot as soon as possible. It is strictly prohibited to continue to fly in case of an accident. Participating teams are strictly prohibited from flying Aerial Robots outdoors.
10. The materials bought from or provided by the organizer SZ DJI Technology Co., Ltd., such as batteries and the Referee System, must be used in accordance with their instructions. SZ DJI Technology Co., Ltd. will not be held responsible for any injuries that arise from improper use of these materials. Teams will be held responsible for any injuries caused to their own members or any third party and for any property loss arising from creating and operating any robots.
11. All team members must remain in strict compliance with the laws and regulations of the country or region. All team members must also pledge that their robots will only be used for the RoboMaster competitions and that their robots will not be illegally modified or used for any illicit purpose(s).



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