ENJOY AI 2026: Battle of Stars

1. Competition theme

Battle of Stars is an exciting robotics competition where teams compete in intense matches. In this competition, robots do more than simply push or collide with each other. Every movement and action is part of a strategy. Winning depends on how well a team plans and works together. Some teams may choose to attack early and put continuous pressure on their opponents. Other teams may focus on defense, make good use of the field, and wait for the right moment to counterattack. During the match, teamwork is very important. Team members must communicate clearly, make quick decisions, and adjust their strategy as the situation on the field changes.

2. Competition field and environment

2.1 Competition field

The competition field is covered by a 216 x 120 cm (see Fig.1). The map is made of PU fabric or printed cloth, with black guide line about 2.5 cm wide. The frame in the middle divides the map into two parts—one part for Red Team and the other for Blue Team. The Red Team starts from the upper left corner, and the Blue Team starts from the lower right corner. Both of them are 30 x 30 cm in size.

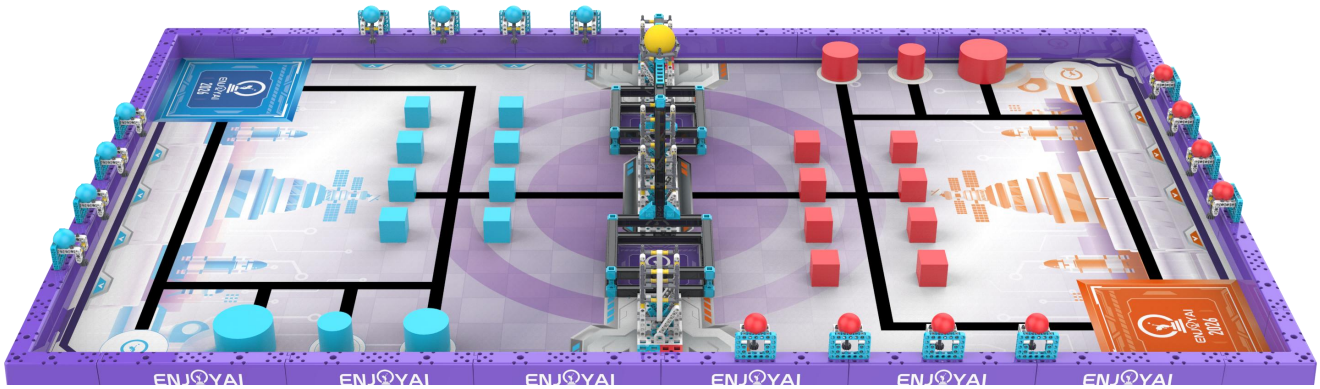

Fig.1 Competition field

2.2 Competition environment

The competition field has fixed edge frames. The field should be lighted with cool low-brightness light, and should be free from magnetic interference. The actual competition environment may vary due to several uncertainties, such as surface textures or unevenness of the field, inconsistent

lighting conditions, variations in the positioning of task models, and other field-related factors. Participants are not allowed to modify any field elements on site, especially the placement or fixation of the field and task models. We suggest that you take all these factors into account when designing your robots.

3. Tasks and Scoring

The tasks are set in fictional scenarios. Do not confuse them with real-life situations.

3.1 Meteor Tower

3.1.1 Three meteor pillars are placed in both the red and blue task area. Each pillar is about 6cm high, with diameters of about 6cm, 8cm, and 10cm, and is made of EVA foam. The positions of the pillars are fixed before the match begins, as shown in Figure 2.

3.1.2 Scoring: A team earns 100 points by stacking the three meteor pillars correctly. The largest pillar must be at the bottom and the smallest at the top. The bottom pillar must be completely inside the marked boundary. If it touches the boundary line, no points are awarded. See Figure 3.

3.1.3 If a team carries any pillar to the robot base, their score for this task will be canceled.

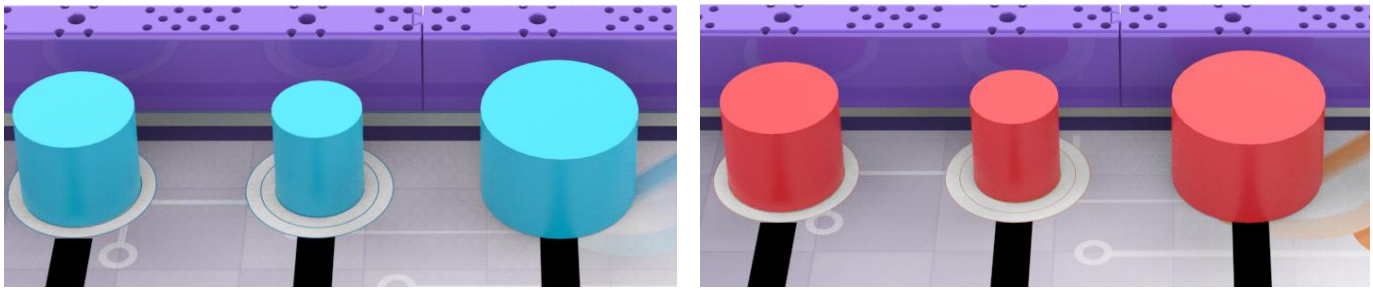

Fig.2 Initial state

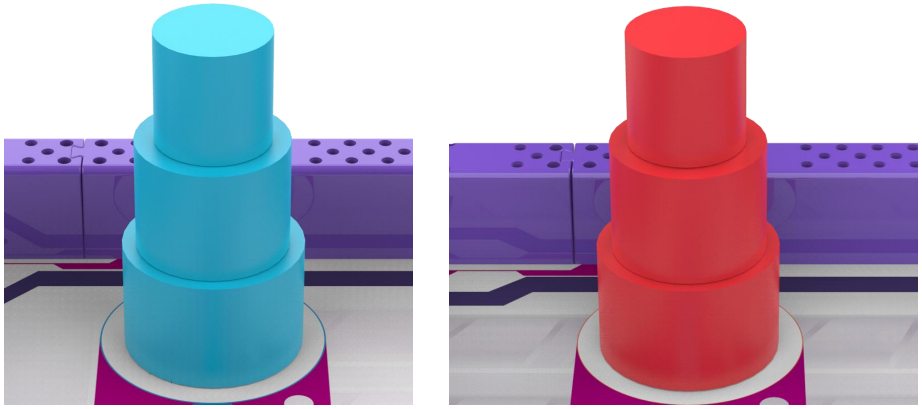

Fig.3 Final state

3.2 Energy Defense

3.2.1 Eight energy blocks are placed in both the red and blue task area. Each block is about 5cm and made of EVA foam, as shown in Fig. 4.

3.2.2 Scoring: A team scores 10 points for each energy block that is placed in the defense area. The block's top down projection must be at least partly inside the defense area, including the inside and top of the border wall. The block must not touch any area outside the defense area.

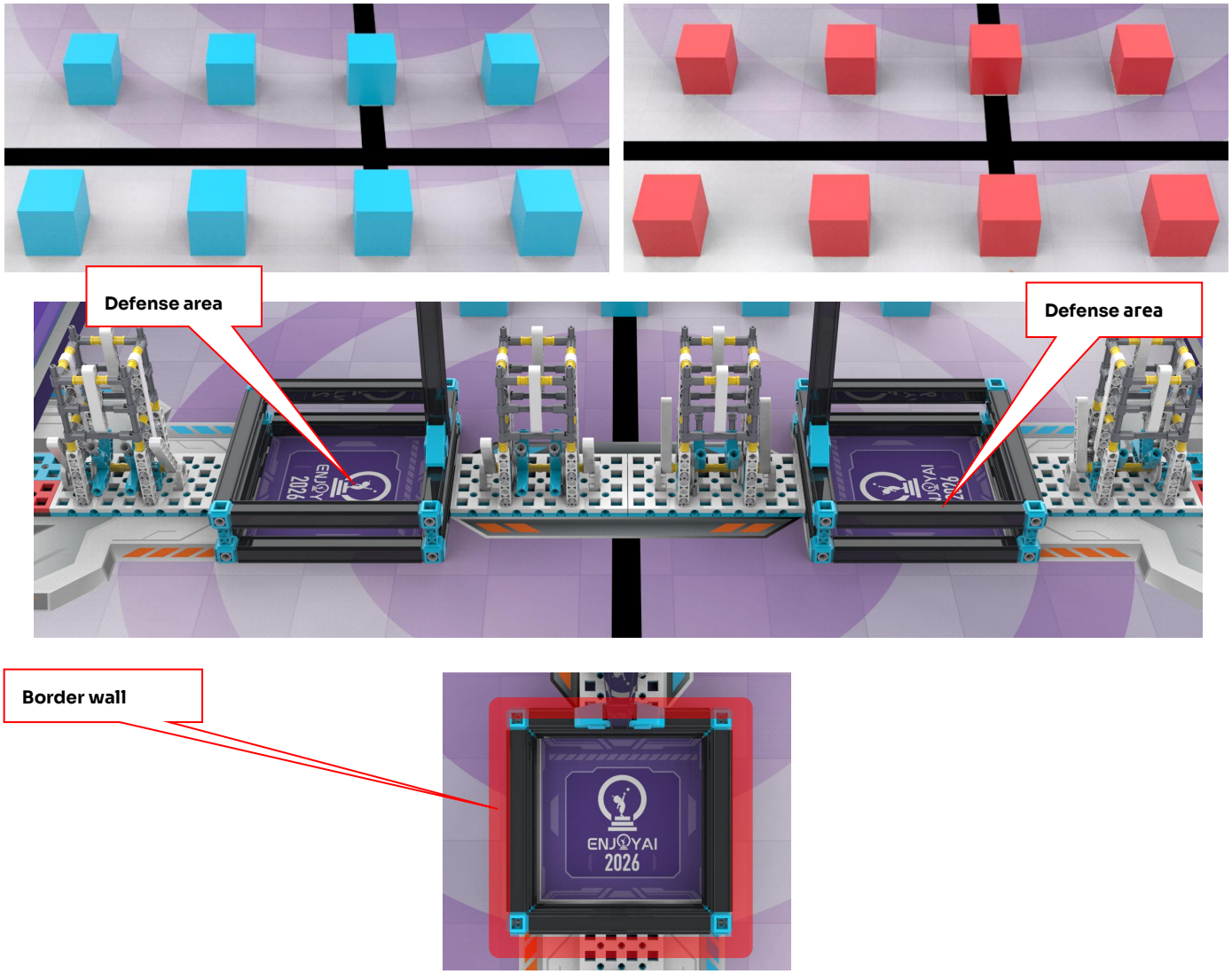

Fig.4 Initial state

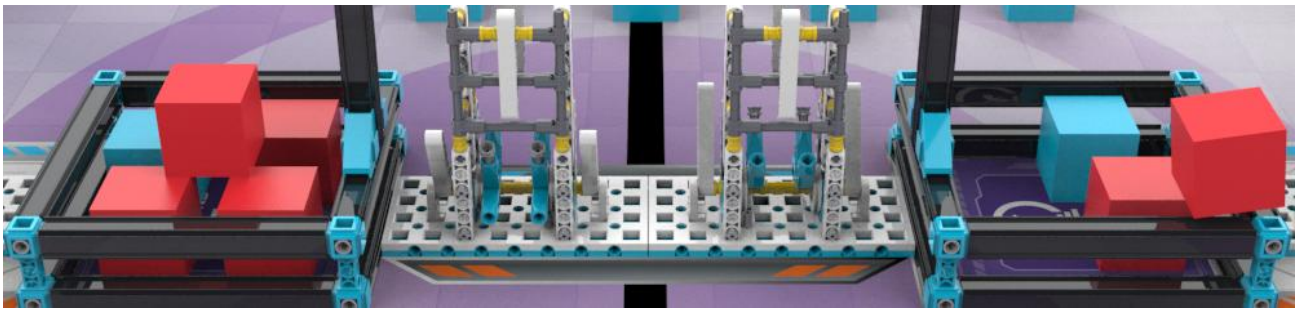

Fig.5 Final state

3.3 Full Firepower

3.3.1 Eight star power balls are placed along the borders of both the Red Team and Blue Team task areas. Each ball is made of EVA foam and has a diameter of about 4 cm. Four collection boxes are

placed in the center of the field. Each box has a lever at the bottom, facing the team bases. The lever can be used to push the balls toward either team's side. See Figure 6.

3.3.2 Scoring: Each star power ball scores 15 points when it enters a collection box, either inside the box or on top of the box.

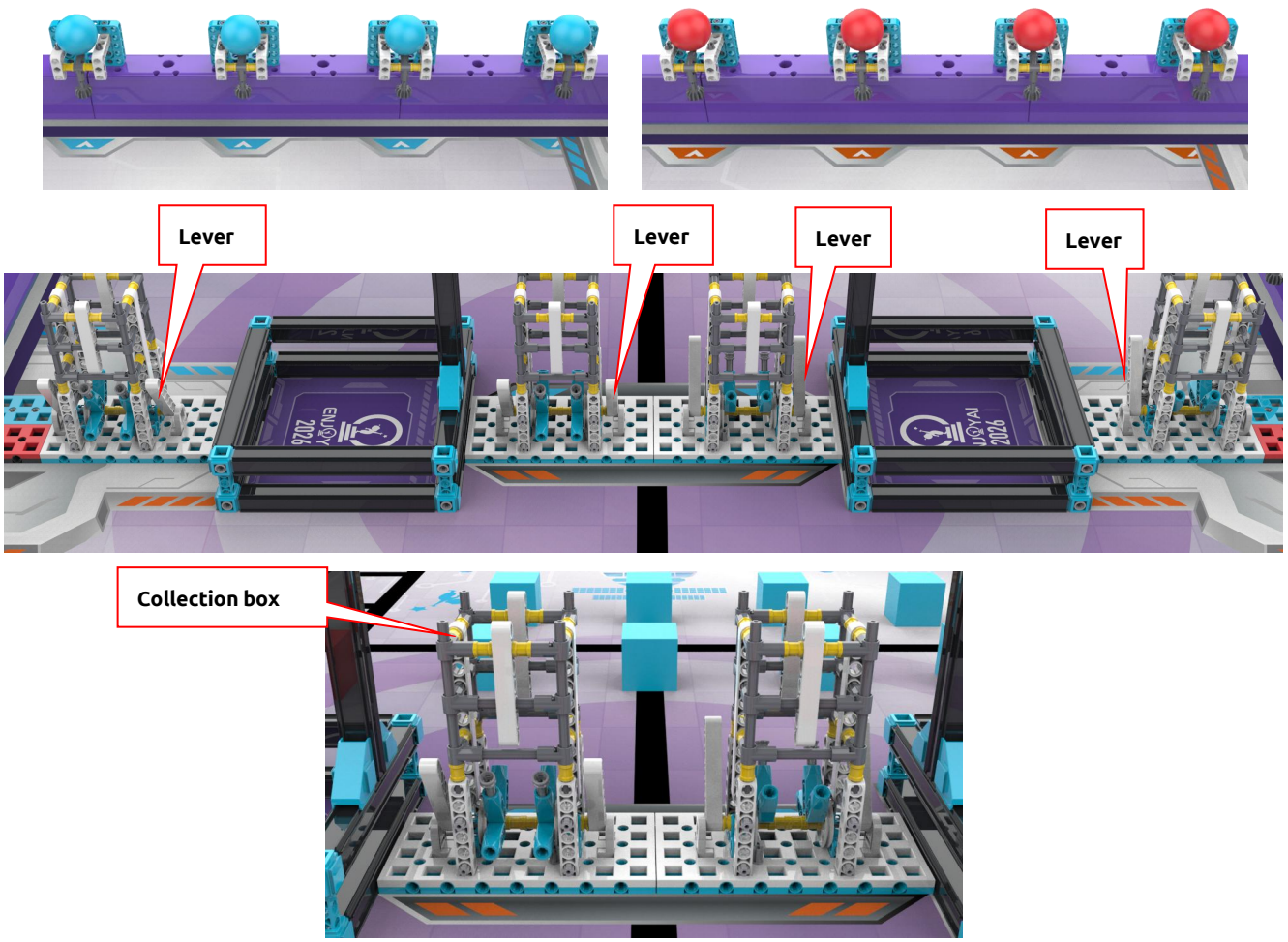

Fig.6 Initial state

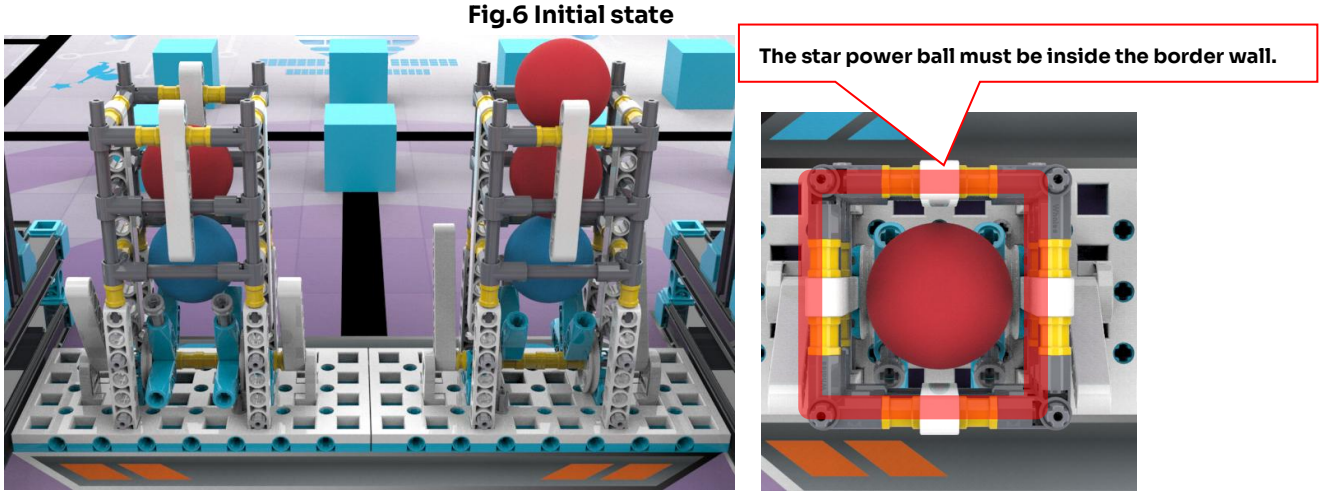

Fig.7 Final state

3.4 The Final Fortress

3.4.1 A yellow energy ball is placed in the middle of the field, with diameter about 6cm and made of

EVA foam, as shown in Fig. 6.

3.4.2 A team is considered qualified if it meets all of the following conditions: Task 3.1 is completed; At least five of the team's own energy blocks are in the defense area for Task 3.2; For Task 3.3, at least two collection boxes each contain two of the team's own star power balls. Once these conditions are met, the robot may remove the energy ball from the task frame at the top center of the field. The energy ball must fully leave the task frame. The team wins immediately.

3.4.3 If a team removes the energy ball without meeting the conditions in 3.4.2, the team receives one foul. See Section 7.4 for foul details. The referee will reset the energy ball.

3.4.4 Once a team wins directly, the match ends immediately and both teams must stop at once.

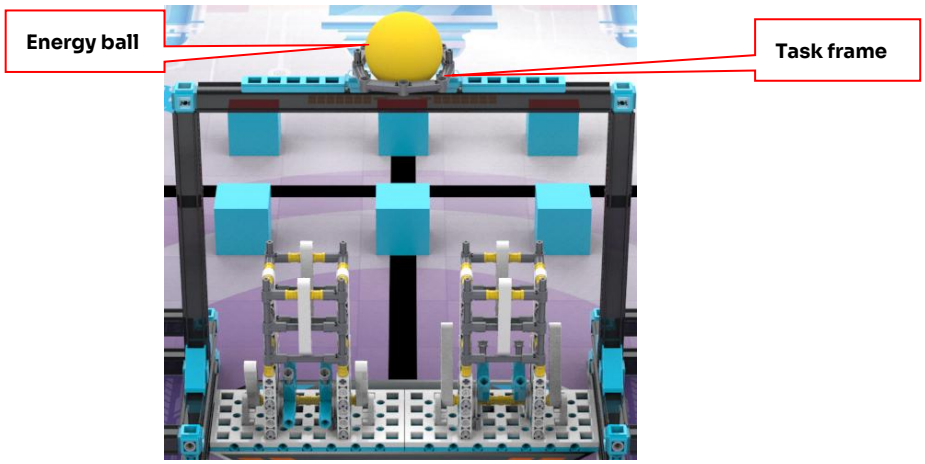

Fig.8 Initial state

3.5 Task requirements

3.5.1 During the match, Task 3.1 must be completed autonomously after the robot leaves the base. If any manual control is used at any time during this task, Task 3.1 is invalid and no points are awarded. All other tasks may be completed either autonomously or by remote control.

4. Robot

4.1 Robot size: The robot cannot exceed 30 x 30 x 30 cm (L*W*H) before leaving the base. After that, parts of the robot can unfold or expand as needed.

4.2 Controller: You cannot change your controller during a single match. You must use only one controller for each robot.

4.3 Actuators: Each robot may use no more than seven motors in a match (servos are included). One single-suction air pump system may also be used.

4.4 Sensor: No restriction on the types and number of sensors for each robot.

4.5 Structure: The robot must use plastic, snap-together building parts. 3D-printed pieces are not allowed, and you may not use rubber bands, zip ties, screws, glue, tape, or any other extra connecting materials.

4.6 Power supply: Each robot must use one built-in battery box (no external power sources allowed). The battery voltage cannot exceed 9V, and you cannot change the voltage.

4.7 Each team can use only one robot. You cannot share your robot with other teams.

5. Competition

5.1 Participating team

5.1.1 Each team must have two students and one coach. The students must still be enrolled in school as of June, 2026.

5.1.2 Participants should proactively deal with problems they may meet during the competition. They must respect and politely communicate with their teammates, opponents, volunteers, referees, and all those who contribute to the competition.

5.2 Competition format

5.2.1 The competition has two divisions: elementary school and middle school.

5.2.2 The competition has preliminaries and finals. The preliminaries are round-robin tournaments, and the finals are knockout tournaments. Every team will have an equal number of chances to compete.

5.2.3 Preliminaries

5.2.3.1 During preliminaries, teams are grouped through draws. For example, if there are 31 teams, they are split into 8 groups as shown in Fig 9. In each group, teams will have a round-robin tournament. The winning team receives 3 points, and the losing team receives 0 points. If two teams are tied in a round, both teams will get 1 point.

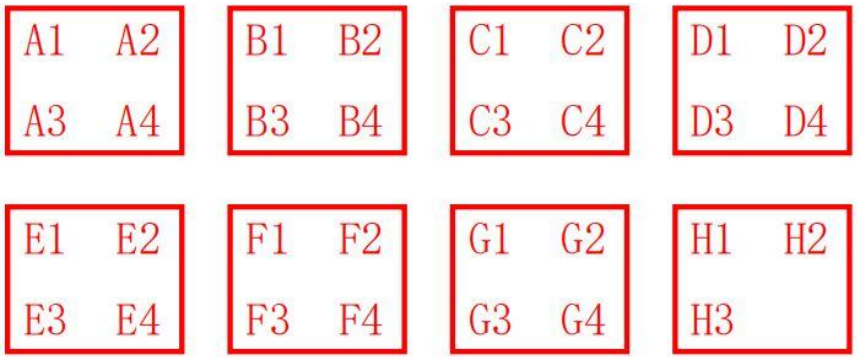

Fig.9 Grouping for preliminaries

5.2.3.2 In the preliminaries, if neither team wins directly, the team with the higher score wins. If both teams have the same score, the team that completed Task 3.1 wins. If both teams completed Task 3.1, or if neither team completed it, the match is a draw and each team receives 1 point.

5.2.3.3 For teams with the same total points within a group, rankings are decided in the following order:

1. The team with more direct wins ranks higher.

2. If still tied, the team with the higher total score ranks higher.

3. If still tied, the team that completed Task 3.1 more times across all matches ranks higher.

4. If still tied, the team with fewer total restarts across all matches ranks higher.

5. If the tie remains, the teams will play an additional tie breaker match.

5.2.4 Finals

5.2.4.1 The finals are knockout tournaments (see Fig. 10).

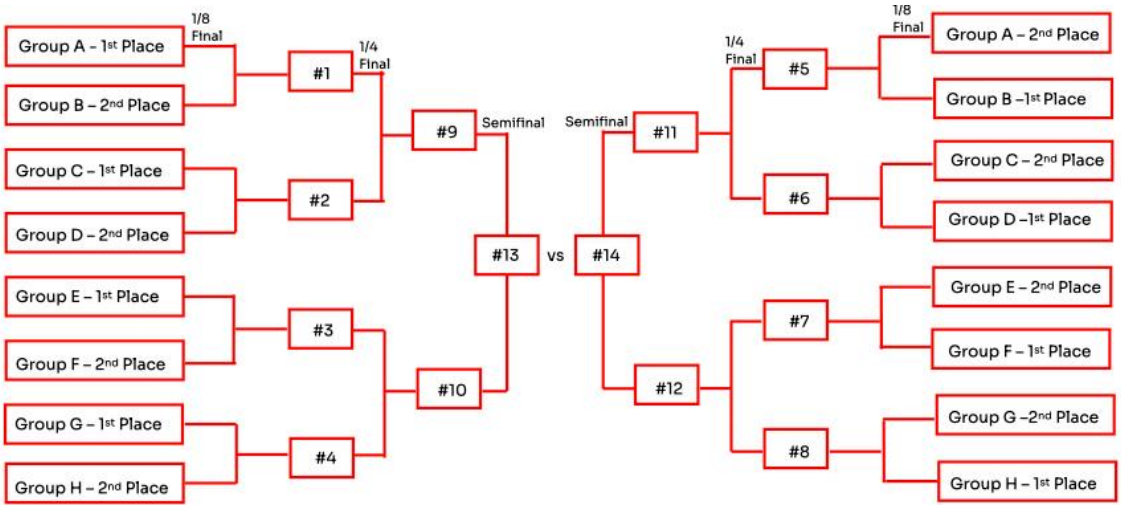

Fig.10 Finals

5.2.4.2 In the finals, if no team achieves a direct win, the following ranking rules are followed in sequence:

(1) The teams with higher points in the current round rank higher.

(2) The teams with higher scores in Task 3.3 rank higher.

(3) The teams that have completed Task 3.1 rank higher.

(4) The teams with fewer restarts in the current round rank higher.

(5) The teams will have a tie-breaker round if needed.

5.2.5 The organizing committee may change the competition format based on the number of registered teams and the actual venue setup.

5.3 Procedure

5.3.1 Building and programming

5.3.1.1 You can code and debug your robot only in the allowed area of the competition field.

5.3.1.2 Teams must sign in before entering the preparation area. Referees will check all tools and parts to make sure that they can be used in the match. Students may bring pre-built robots into the preparation area.

5.3.1.3 If a team goes online, downloads files, take photos of the competition field, or contact your coach or parents, their score for that round will be canceled.

5.3.1.4 Teams will have some time to test and adjust their robots before the match. After that, robots must be placed in the set area. Once placed, teams can't change or download programs until the match is over.

5.3.1.5 After each round of competition (a round robin group is considered one round), teams may repair their robots and modify their control programs in the prep area.

5.3.2 Pre-match preparation

5.3.2.1 Take your robot and follow the guide into the match area. If you and your teammates are late, your team will lose the match.

5.3.2.2 Team members on the field must stand near the robot base and must not lean against the competition table.

5.3.2.3 Put your robot into the robot base. The top down projection of the robot (including any attached components) cannot extend partially or entirely beyond the robot base.

5.3.2.4 Attending team members must finish all preparations within one minute, during which the robot must remain within the robot base, and no program modification or downloads are allowed. Once you are ready, signal to your referee.

5.3.3 Start of a match

5.3.3.1 After the match starts, you robot starts moving on its own.

5.3.3.2 When referees confirm that a team is ready, they will count down "3, 2, 1, start". After hearing "start", you can start your robot.

5.3.3.3 If a robot moves before "start" is said, it is a false start. The team will get a warning or a penalty.

5.3.3.4 Once the robot starts, it can only follow its pre-programmed instructions or remote control.

5.3.3.5 After the robot starts, it must no detach or drop any parts onto the field. Any detached parts will be removed from the field by the referee and kept until the end of that round. A foul will be triggered if a team detaches any parts to score or to interfere with the opposing team. Their score for the related task will be invalid. For example, if the red team detaches parts to interfere with the Blue team during the Full Firepower task, the Red team will receive no points for the task and the detached parts will be kept by referee.

5.3.3.6 Once the match starts, if a task model leaves the field (unless the robot carry this task model to the base on its own), it cannot be returned until the current round ends.

5.3.4 Retry

5.3.4.1 A retry will be triggered in any of the following cases:

(1) You touch the robot after it leaves the robot base.

(2) The robot goes off the competition field.

5.3.4.2 During the retry, you cannot change the layout of the field, and you must put the robot back to the robot base.

5.3.4.3 Tasks that are completed before the retry will still count. Any scoring models carried by the robot must be reset to their original positions by the team, with the referee's permission.

5.3.4.4 The number of retries for each round is not limited. The timer won't stop or restart during retries.

5.3.5 Return to the robot base

5.3.5.1 The robot may return to the base multiple times, either autonomously or by remote control, without being counted as restarts.

5.3.5.2 Robot returning: The return is considered successfully only if the top down projection of any part of the robot is entirely within the boundaries of the robot base.

5.3.5.3 Task model return: A task model is considered returned if any part of its top down projection is within the robot base, or if it is carried back to the base by the robot.

5.3.5.4 Once the robot has returned to the base, the team is allowed to touch the robot and modify or repair its structure.

5.3.6 End of match

5.3.6.1 Each round lasts for 180 seconds.

5.3.6.2 If no direct win occurs during the match, that round will run for the full 180 seconds.

5.3.6.3 After the referee announces that the round is over, power off your robot immediately, and do not touch or move your robot or task models on the field. If the team or the robot changes the state of any task model, no points will be awarded for the related task.

5.3.6.4 The referee will announce your score. If the score is miscalculated, you can ask the referee to correct it. If you have no objections, you must sign to confirm your score. In the event of a dispute, you may appeal to the chief referee for a final decision. The organizing committee will not accept any appeals made outside the field.

5.3.6.5 After the round ends, you must restore the layout of the competition field to the initial state and take your robot to the prep area.

6. Scoring

6.1 After each match, points are awarded based on the tasks completed on the field. Any task model that is touched by the team's robot after the referee announces the end of the match will not be scored for that team. If a completed task is damaged by the robot or the team before the match ends, no points will be awarded for that task. The scoring criteria for each task are described in Section 3.

6.2 The order in which tasks are completed does not affect the score for each task.

6.3 If there is no retry in a match, and your robot operates in a smooth and continuous motion, you will get an extra reward of 40 points. A bonus of 30 points will be awarded for completing the match with one retry; 20 points for two retries; 10 points for three retries; and no bonus points will be awarded for four or more retries.

7. Fouls and disqualification

7.1 If you fail to arrive 15 minutes after debugging starts, your team will be disqualified from that round.

7.2 If there is a false start for the first time, your team will get a warning. The robot must return to the standby area to restart, and the timer will be reset. If a second false start occurs, you team's score for that round will be invalidated.

7.3 If your robot collides with any field element and causes damage, your team will receive a warning. A second violation will make your team disqualified from that round.

7.4 Fouls:

7.4.1 A fouls will be triggered in any of the following cases:

(1) Your robot touches the other team's robot while the other robot is carrying a task model and your robot is not.

(2) The robot or the team removes the energy ball before the conditions in Rule 3.4.2 are met.

Definition: A retry is called when the robot is required to return to the base. The team loses 10 points and is counted as one retry.

7.5 If a robot damages a task model, the team receives one warning and no points are awarded for that task. The other team keeps its score for that task.

7.6 If you touch a task model outside the robot base or the opposing robot, your team will be disqualified from that round and the score will be recorded based on the current state.

7.7 If you don't follow the referee's instructions, your team's score for that round will be invalidated.

7.8 If you access the internet, download materials, take photos or videos of the competition field, your team will be disqualified from that round.

7.9 If you contact your coach or parents without the chief referee's permission, your team's score for that round will be invalidated.

7.10 Any matters not specified in these rules will be decided and interpreted by the chief referee.

7.11 These rules are the only basis for refereeing. During the competition, referees have full authority, and their decisions stand. Referees are not required to review match recordings. Any questions about a referee's decision must be raised by one student representative to the chief referee between matches. Once the chief referee has made a decision, no further appeals will be accepted.

Scoring Sheet of Battle of Stars			Division	Preliminary No.___	Competing Teams
				Final No.___	
Red team		**Team name**			
Blue team					
Task	**Description**	**Points**	**Task score**		**Whether finished**
			Quantity	Points	
Meteor Tower	Three pillars from largest at the bottom to smallest at the top and top down.	100			
Energy Defense	The top down projection of a block is within the defense zone.	10 / per energy block			
Full Firepower	A star power ball enters a collection box.	15 / star power ball			
The Final Fortress	The energy ball is removed from the task frame at the top center of the field and brought into the team's half.				
Extra reward	40-(Number of retries)*10, ≥0				
Points lost					
Points scored					
Total duration					
Winner					