# ARC Championship Events Manual

2025 - 2026

V1.4

# Table of Contents

**Release Notes** ..... **4**
**Intellectual Property Statement** ..... **4**
**Using this Manual** ..... **5**
**1. Foreword** ..... **5**
1.1 About Rules Manuals ..... 5
1.2 Q&A ..... 5
**2. Key Terms** ..... **6**
**3. 3v3** ..... **9**
3.1 Robot and Pilot ..... 9
3.1.1 Hero ..... 10
3.1.2 Infantry ..... 11
3.1.3 Sentry ..... 12
3.2 Competition Area ..... 13
3.2.1 Battlefield ..... 13
3.2.2 Starting Zone and Resupply Zone ..... 15
3.2.3 High Ground ..... 16
3.2.4 Capture Point ..... 16
3.2.5 Bumpy Road ..... 17
3.2.6 Miscellaneous ..... 18
3.2.6.1 Projectiles ..... 18
3.2.6.2 Visual Marker ..... 19
3.2.6.3 Pilot Room ..... 19
3.3 Competition Mechanism ..... 20
3.3.1 HP Loss and Penalty for Exceeding Limit ..... 20
3.3.1.1 Attack Damage or Collision ..... 20
3.3.1.2 Exceeding the Projectile Speed Limit ..... 21
3.3.1.3 Exceeding Barrel Heat Limit and Cooling ..... 21
3.3.1.4 Exceeding Chassis Power Limit ..... 23
3.3.1.5 Referee System Disconnection ..... 23
3.3.1.5.1 Abnormal Disconnection ..... 24
3.3.1.5.2 Armor Module or Supercapacitor Management Module Disconnection ..... 24
3.3.1.5.3 Speed Monitor Module Disconnection ..... 25
3.3.1.6 Penalty Damage ..... 26
3.3.2 HP Recovery and Respawn Mechanism ..... 26
3.3.2.1 HP Recovery Mechanism ..... 26
3.3.2.2 Respawn Mechanism ..... 27
3.3.3 Economy System ..... 27
3.3.4 Capture Point and Victory Point Mechanisms ..... 28
3.3.5 Round Winning Criteria ..... 28
**4. 1v1** ..... **30**
4.1 Robot and Pilot ..... 30

4.1.1 Infantry....30
4.2 Competition Area....31
4.3 Competition Mechanism....35
4.3.1 HP Loss and Penalty for Exceeding Limit....35
4.4 Competition Format and Winning Criteria....35
**5. Engineer Challenge....36**
5.1 Robot and Pilot....36
5.2 Competition Area....37
5.2.1 Starting Zone....39
5.2.2 Resource Island....40
5.2.3 Exchange Station....42
5.3 Mission....46
5.3.1 Scoring....46
5.3.2 Ranking....47
**6. ARC Technical Innovation Conference [ARCTIC]....48**
6.1 ARCTIC Presentation....48
6.1.1 Presentation Requirements....48
6.1.2 Format....48
**7. Competition Process....49**
7.1 Pit Crew Allowances....51
7.2 Pre-Match Inspection....51
7.3 L3 and L2 Staging Areas....52
7.4 Setup Period....53
7.4.1 Official Timeout....54
7.4.2 Team Timeout....55
7.5 15-Second Referee System Initialization Period....55
7.6 5-Second Countdown....55
7.7 Battle....56
3v3 and 1v1....56
Engineer Challenge....56
7.8 End of Round....56
3v3 and 1v1....56
Engineer Challenge....56
7.9 Results Confirmation....56
7.10 Exit the Field....56
**8. Violations and Penalties....57**
8.1 Penalty System....57
8.1.1 Forms of Penalties....57
8.1.2 Types of Penalties....58
8.2 Penalty Rules....60
8.2.1 Participants....60
8.2.1.1 General Rules....60
8.2.1.2 Battlefield Specifications....62

8.2.1.3 Pilot Room Requirements....63
8.2.2 Robots....63
8.2.3 Interactions....65
8.2.3.1 Interactions between Robots....65
8.2.3.2 Interactions between Robots and Battlefield Components....66
8.3 Serious Violations....66
**9. Irregularities....67**
**10. Appeals....68**
10.1 Appeal Process....69
10.2 Appeal Materials....70
10.3 Appeal Outcomes....70
**Appendix A: References....72**
**Appendix B: Appeal Form....73**

# Release Notes

| Date | Version | Release Notes |
|---|---|---|
| May 4, 2026 | 1.4 | • Removed Tournament Format, now found in Site Manual<br>• Added Site manual to manual hierarchy |
| March 29, 2026 | 1.3 | • Updated table 3-9<br>• Fixed formatting and typos<br>• Modified 3.3.2.2 Respawn Mechanism<br>• Corrected definition of Weakened state<br>• Revised the definition of Invincible<br>• Updated paragraph below Table 3-11<br>• Revised R36 and R41 |
| March 17, 2026 | 1.2 | • Updated following RoboMaster RMUL 2026 V1.2.0 in section 3.3.1.2<br>• Added an additional view to Figure 3-10 showing height of Visual Markers |
| February 1, 2026 | 1.1 | • Figure 3-6 updated<br>• Information updated following RoboMaster RMUL 2026 V1.1.0 in sections 3.3.1.2 and 3.3.1.3<br>• Clarified backup robot process for Infantry and Sentry<br>• Increased number of Pit Crew Members<br>• Added penalties related to Captains' responsibilities<br>• Revised the Match Confirmation process |
| October 28, 2025 | 1.0 | Initial Release |

# Intellectual Property Statement

ARC Robotics encourages and promotes technical innovation and open-source technology by respecting the intellectual property rights of participants. All rights related to the intellectual property developed for the purpose of ARC events are owned by the individual teams that developed it. ARC Robotics will not participate in the handling of intellectual property disputes amongst or within teams. The participating teams must properly handle all aspects of intellectual property rights among internal school members, company members, and other members of the team.

While using the RoboMaster Referee System and other supporting materials provided by the RoboMaster Organizing Committee, teams should respect all intellectual property owned by DJI and RoboMaster. Teams are also prohibited from engaging in any behavior that violates intellectual property rights, including but not limited to reverse engineering, replication or translation. Any behavior that may infringe upon the intellectual property rights of event organizers beyond acceptable fair use indicated in official competition manuals and technical documentation for the competition will be investigated, and the infringer will be held legally liable in strict accordance with the law. For suggestions on open-source materials, please refer to https://forums.arc-robotics.org.

# Using this Manual

The ARC Championship (ARCC) is a robotics event aimed at cultivating young engineers. Documents related to the competition may contain sensitive terms, names, events, and technical content. These do not reflect any existing technologies or actions in reality, nor do they intend to involve any specific country, organization, or individual. This manual is intended solely to explain the rules of the ARC Robotics Competition and must not be used for any other purposes.

| | |
|---|---|
| ⚡ | Hints and Tips |

# 1. Foreword

## 1.1 About Rules Manuals

The ARC Championship Manuals, consisting of the Participant Manual, Events Manual, and Robot Building Specifications are applicable to all participants, referees, competition staff, and involved parties. All manuals can be found on the ARC Robotics Website.

ARC Robotics may update the manual periodically up to and including the duration of the 2026 ARC Championship.

ARC Robotics reserves the sole right of final interpretation of all Rules Manuals, Q&A, and other released content. ARC Robotics may refer to specific versions of RoboMaster Manuals and documentation as applicable. In the event of an internal conflict between multiple ARC-published sources, the following hierarchy shall be obeyed:

1. On-site Captain's meeting or announcements published by ARC
2. ARCC Q&A answers
3. ARCC Site Manual
4. ARCC Event Manual
5. ARCC Participant Manual
6. ARCC Robot Building Specifications

## 1.2 Q&A

Shall a question arise about the interpretation of rules, teams should first check the Q&A tables. If no answer for the question can be found, the question shall be submitted to the Q&A. Links to both can be found on arc-robotics.org/2026-participants/2026-manuals. Official RoboMaster Q&A from any season, including 2026, does not apply to ARCC 2026.

# 2. Key Terms

**Table 2-1: Key Terms**

| Term | Definition |
|---|---|
| ARC Robotics / ARC | Governing and Organizing body for ARC Championships. |
| ARC Championship / ARCC | Annual Event in which competition events are played. |
| **Robot** | |
| Robot Main States | **Alive**: The Referee System Main Controller Module successfully connects to the Referee System server and the robot's HP is not zero.<br>**Defeated**: The robot's HP drops to zero. This can be caused by Armor Modules suffering damage from attack or collision, abnormal disconnection of the robot, Referee System module disconnection, and robot ejection.<br>● **Ejected**: A robot is issued a Red Card.<br>● **Temporarily Activated**: A robot's chassis and gimbal is powered on temporarily after it has been defeated or ejected. The Launching Mechanism of the robot is powered off in this period.<br>**Abnormal Disconnection**: The Referee System Main Controller Module is unable to connect to the Referee System server during the competition, due to a power outage on the robot or other reasons.<br>*Note: After a robot is defeated, the Referee System will cut off the power supply to the robot (except for the Mini PC).* |
| Referee System | The Referee System consists of a set of onboard modules, the server, and the player client software installed on a PC. It controls and monitors robot power, projectile launches and damage, and it automatically enforces game rules. |
| Inter-Robot Communication | An interactive method for robots to communicate with one another through the Referee System serial port. |
| Robot Chassis | The primary structural frame that carries a robot's propulsion system and accessories. |
| Chassis Power | The electrical power input to the propulsion system that enables the robot's horizontal movement and rotation. For details, please refer to the definition of chassis power in the "Referee System Mounting Specifications" chapter of the Robot Building Specifications. |
| Launching Mechanism | A mechanism capable of launching a projectile from a robot on a fixed trajectory and at a certain initial speed.<br>When the Launching Mechanism is "Locked," it is powered off and the Ammo Booster port on the PMM does not provide any 24V output. When the Launching mechanism is "Unlocked,"the PMM |

| | |
|---|---|
| | provides 24V of power through Ammo Booster, and can be powered on or off depending on its projectile allowance. |
| Launch | A robot's action of releasing projectiles. "Launch" mentioned in the following "Competition Mechanism" section is considered valid when a launch action is detected by the Referee System. |
| Projectile Speed | The velocity detected by the relevant modules of the Referee System after a projectile has completed its acceleration. |
| Barrel Heat | Barrel heat accumulates as a robot launches projectiles. It is used to limit continuous projectile firing. |
| Projectile Allowance | The quantity of projectiles each robot is currently allowed to launch. |
| Initial HP | The HP (Health Points) value set by the Referee System for a robot at the start of the competition. |
| Current HP | A robot's real-time HP (Health Points). |
| Maximum HP | The maximum value to which a robot's HP (Health Points) can be restored. |
| Invincible | A state in which a robot is immune to damage from Attack or Collision |
| Attack | Describes the behavior of a robot when launching projectiles at a target. |
| Destruction | Where a robot attacks the Armor Module of the opponent's robot until the latter's HP drops to zero. |
| Occupation | When an alive robot has reached a Buff Point, its RFID Interaction Module has detected the RFID Interaction Module Card in the area or has met other conditions, and it has obtained certain special effects. |
| Entanglement | Mechanisms of robots are entangled with one another during the competition, i.e. one robot remains connected to the other robot and is pulled with said robot whichever direction it moves. |
| Collision | An active act of collision by a robot during the competition. |
| **Battlefield** | |
| Buff Point | A zone that, once occupied by a robot during the competition, will generate a special effect. |
| Penalty Zone | An area into which a robot's entry is forbidden. |
| Battlefield Component | Composite elements of the Battlefield. |
| **Personnel** | |

| | |
|---|---|
| Arbitration Committee | A body consisting of the Director of Competition, Head Referees, Head Inspector, and Tournament Manager which has final interpretation over competition regulations and makes rulings on Appeals. |
| Director of Competition | Role is defined in the ARC Robotics Directory.<br>Serves as a member of the Arbitration Committee. |
| Tournament Manager | Role is defined in the ARC Robotics Directory.<br>Serves as a member of the Arbitration Committee. |
| Head Referee | The lead referee responsible for maintaining the order of the competition and enforcing its rules. |
| Head Inspector | The referee responsible for leading and assigning Pre-Match Inspection tasks, with the final right of interpretation over the inspection standards. |
| Referee | Personnel responsible for maintaining the order of the competition and enforcing its rules, such as Field Referee or Inspector. |
| Participating Team | Team that has registered and been recorded in the registration system for the current competition season. |
| Participant | Individual who is a member of a Participating Team. |
| Pit Crew Member | Participant who may take the robot through Pre-Match Inspection and onto the field to participate in a Match. Pit crew members may be permitted to enter Inspection, the Staging areas and the Competition Area. |
| Pilot | Pit Crew Member responsible for controlling a robot during the competition. |
| Offending Team | A Participating Team that violates the competition rules. |
| Offender | Participant that violates the competition rules. |
| **Competition Process** | |
| Match | Depending on whether it is BO2, BO3 or BO5, a match may contain several rounds. |
| Round | A complete cycle of the Setup Period, the Referee System Initialization Period, a Five-Second Countdown Period, and the Battle. |
| Official Timeout | A Timeout initiated by the Head Referee during the Setup Period or Referee System Initialization Period. |
| Team Timeout | A Timeout requested by a Participating Team during the Setup Period. |

| | |
|---|---|
| Regular Battle Damage | During a Setup Period between rounds or during a round of a match, a Referee System Onboard Module experiences a fault. |
| **Factors Determining the Competition Outcome** | |
| Attack Damage | The HP a robot loses when it is hit by projectiles.<br>*Note: HP lost due to penalties applied to a robot is counted as attack damage from the opposing team.* |
| Non-attack Damage | HP lost as a result of collision on an Armor Module, Referee System module disconnection, or abnormal disconnection of the robot. |
| Total Remaining HP | The total remaining HP of one side's alive robots at the end of each round. |

# 3. 3v3

During a five-minute Battle, both teams control their robots to engage in tactical combat in the core competition area — the Battlefield. The team that gains greater control over the Battlefield deducts "Victory Points" from their opponent. The winner is the team with more Victory Points at the end of the Battle.

## 3.1 Robot and Pilot

ARCC requires robots to fight together as a team with good coordination and teamwork. For the robot building specifications, please refer to the ARCC 2026 Robot Building Specification. The required robot and pilot lineup are as follows:

**Table 3-1: Robot and Pilot Lineup for 3v3**

| Robot Type No. | ID No. | Fielded Quantity | Pilot Lineup |
|---|---|---|---|
| Hero | 1 | 1 | 1 Pilot/Robot |
| Infantry | 3 | 1 | 1 Pilot/Robot |
| Sentry | 7 | 1 | 0 Pilots/Robot |

- The minimum lineup for the first round of each match is two robots.
- At the end of each round, the Pilot can be replaced by another member of the pit crew of the current match.

### 3.1.1 Hero

The Hero is the only robot that can launch 42 mm projectiles on the Battlefield.

**Table 3-2: Key Features of Hero**

| Key Features | Descriptions |
|---|---|
| Initial Zone | Starting Zone |
| Operating Mode | No restrictions. Up to one remote controller and one custom controller. |
| Inter-Robot Communication | Allowed |
| Launching Mechanism | 1x 42mm Launching Mechanism |
| Projectile Speed Limit (m/s) | 12 |
| Performance | • Initial/Maximum HP: 350<br>• Chassis Power Limit (W): 100<br>• Maximum Barrel Heat: 200<br>• Barrel Heat Cooling Rate: 24/s |
| HP Loss and Penalty for Exceeding Limit | • Exceeding the Projectile Speed Limit: Applicable<br>• Exceeding Barrel Heat Limit and Cooling: Applicable<br>• Chassis Power Overlimit: Applicable<br>• Attack Damage and Collision: Applicable<br>• Referee System Disconnection: Applicable<br>• Penalty Damage: Applicable<br>For details, see “3.3.1 HP Loss and Penalty for Exceeding Limit.” |
| Projectile Loading | • During the Three-Minute Setup Period, 42 mm projectiles can be preloaded.<br>• The Initial Projectile Allowance is 0. |
| Occupiable Points | • Capture Point (For details, see “3.3.4 Capture Point and Victory Point Mechanisms”).<br>• Resupply Zone (For details, see “3.3.2 HP Recovery and Respawn Mechanism”). |

## 3.1.2 Infantry

The Infantry can launch 17 mm projectiles.

**Table 3-3: Key Features of Infantry**

| Key Features | Descriptions |
|---|---|
| Initial Zone | Starting Zone |
| Operating Mode | No restrictions. Up to one remote controller and one custom controller. |
| Inter-Robot Communication | Allowed |
| Launching Mechanism | 1x 17mm Launching Mechanism |
| Projectile Speed Limit (m/s) | 25 |
| Performance | After the setup period begins, the Infantry Pilot may select the Chassis Type and Launching Mechanism Type from the below:<br>Chassis Type:<br>● Power Priority:<br>○ Initial/Maximum HP: 300<br>○ Chassis Power Limit (W): 90<br>● HP Priority: (default)<br>○ Initial/Maximum HP: 350<br>○ Chassis Power Limit (W): 75<br>Launching Mechanism Type<br>● Burst Priority:<br>○ Maximum Barrel Heat: 230<br>○ Barrel Heat Cooling Rate: 14/s<br>● Cooldown Priority: (default)<br>○ Maximum Barrel Heat: 88<br>○ Barrel Heat Cooling Rate: 24/s<br>Once the Battle begins, the type of Chassis and Launching Mechanism cannot be changed during the round. If no selection is made, the defaults will be chosen. |
| HP Loss and Penalty for Exceeding Limit | ● Exceeding the Projectile Speed Limit: Applicable<br>● Exceeding Barrel Heat Limit and Cooling: Applicable<br>● Chassis Power Overlimit: Applicable<br>● Attack Damage and Collision: Applicable<br>● Referee System Disconnection: Applicable<br>● Penalty Damage: Applicable<br>For details, see “3.3.1 HP Loss and Penalty for Exceeding Limit.” |
| Projectile Loading | ● During the Three-Minute Setup Period, 17 mm projectiles can be preloaded.<br>● The Initial Projectile Allowance is 0. |
| Occupiable Points | ● Capture Point (For details, see “3.3.4 Capture Point and Victory Point Mechanisms”). |

| | |
|---|---|
| | • Resupply Zone (For details, see “3.3.2 HP Recovery and Respawn Mechanism”). |

### 3.1.3 Sentry

The Sentry must operate fully autonomously. It can launch 17 mm projectiles.

**Table 3-4: Key Features of Sentry**

| Key Features | Descriptions |
|---|---|
| Initial Zone | Starting Zone |
| Operating Mode | Autonomous, up to one remote controller for debugging |
| Inter-Robot Communication | Not Allowed |
| Launching Mechanism | 1x 17mm Launching Mechanism |
| Projectile Speed Limit (m/s) | 25 |
| Performance | • Initial Maximum HP: 400<br>• Chassis Power Limit (W): 100<br>• Maximum Barrel Heat: 260<br>• Barrel Heat Cooling Rate: 30/s |
| HP Loss and Penalty for Exceeding Limit | • Exceeding the Projectile Speed Limit: Applicable<br>• Exceeding Barrel Heat Limit and Cooling: Applicable<br>• Chassis Power Overlimit: Applicable<br>• Attack Damage and Collision: Applicable<br>• Referee System Disconnection: Applicable<br>• Penalty Damage: Applicable<br>For details, see “3.3.1 HP Loss and Penalty for Exceeding Limit.” |
| Projectile Loading | • During the Three-Minute Setup Period, 17 mm projectiles can be preloaded.<br>• The Initial Projectile Allowance is 750. It cannot be increased during the match. |
| Occupiable Points | • Capture Point (For details, see “3.3.4 Capture Point and Victory Point Mechanisms”).<br>• Resupply Zone (For details, see “3.3.2 HP Recovery and Respawn Mechanism”). |

## 3.2 Competition Area

### 3.2.1 Battlefield

| | |
|---|---|
| ⚡ | • The dimension error margin of all Battlefield components described herein is within ±10%. The unit for the size parameters on the Battlefield drawings is mm.<br>• The Battlefield has a mirrored layout about the central line. All descriptions and illustrations of Battlefield modules in this text will be based on the Red Team but will apply equally to the Blue Team.<br>• The Battlefield has a complex environment that may feature non-uniform magnetic fields, winds, venue lighting effects, and other environmental conditions that are not fully symmetrical. |

The core competition area of 3v3 is called the Battlefield. The Battlefield is 12 m x 8 m (L x W) in size. Each team has a Resupply Zone, and there is a shared Capture Point.

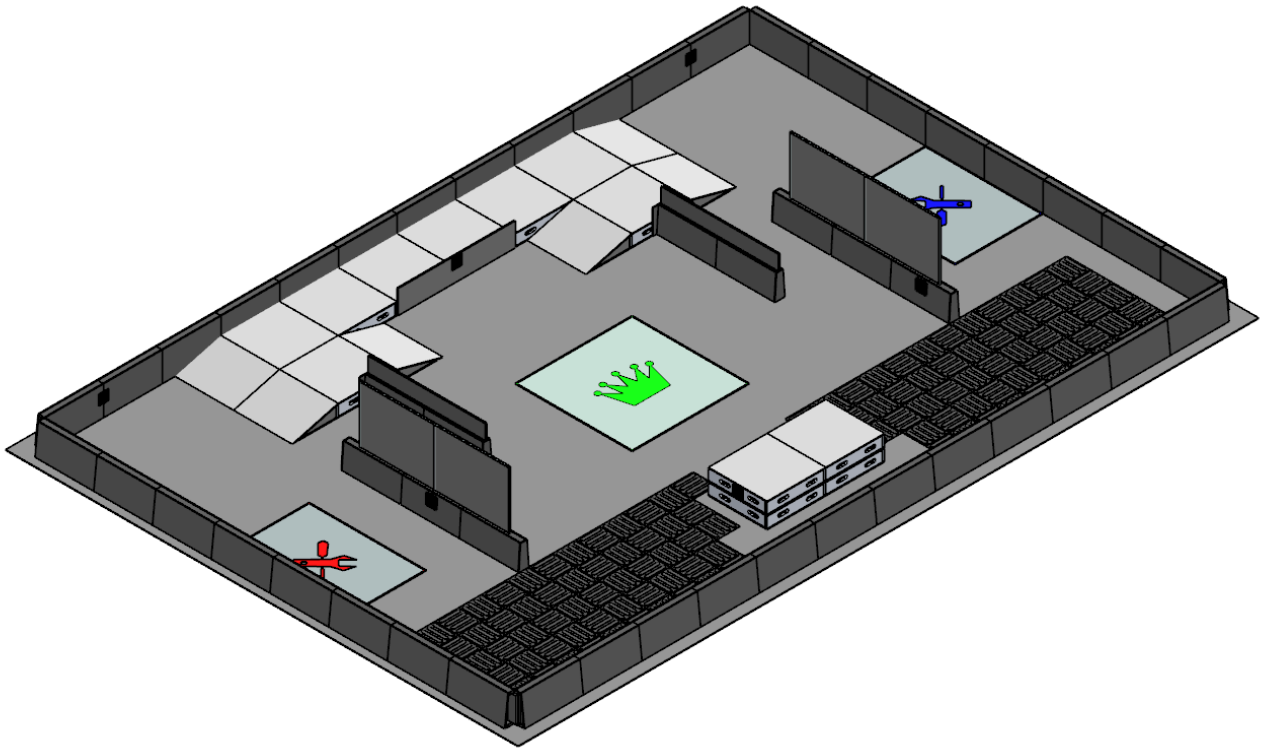


**Figure 3-1: Isometric View of 3v3 Battlefield**

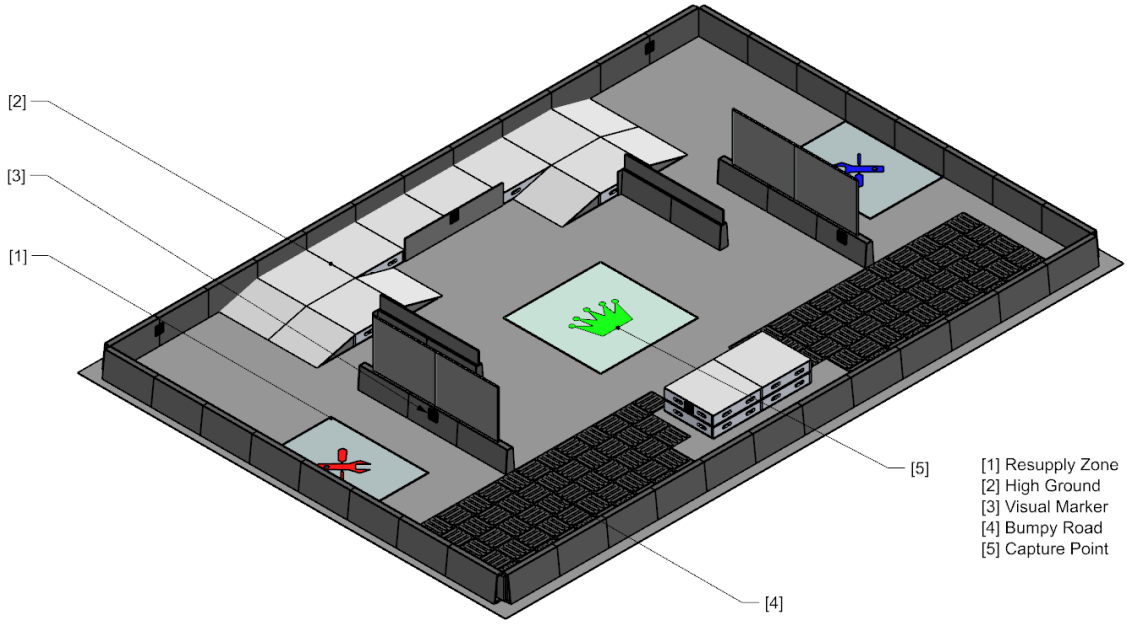



**Figure 3-2: Zones of 3v3 Battlefield**

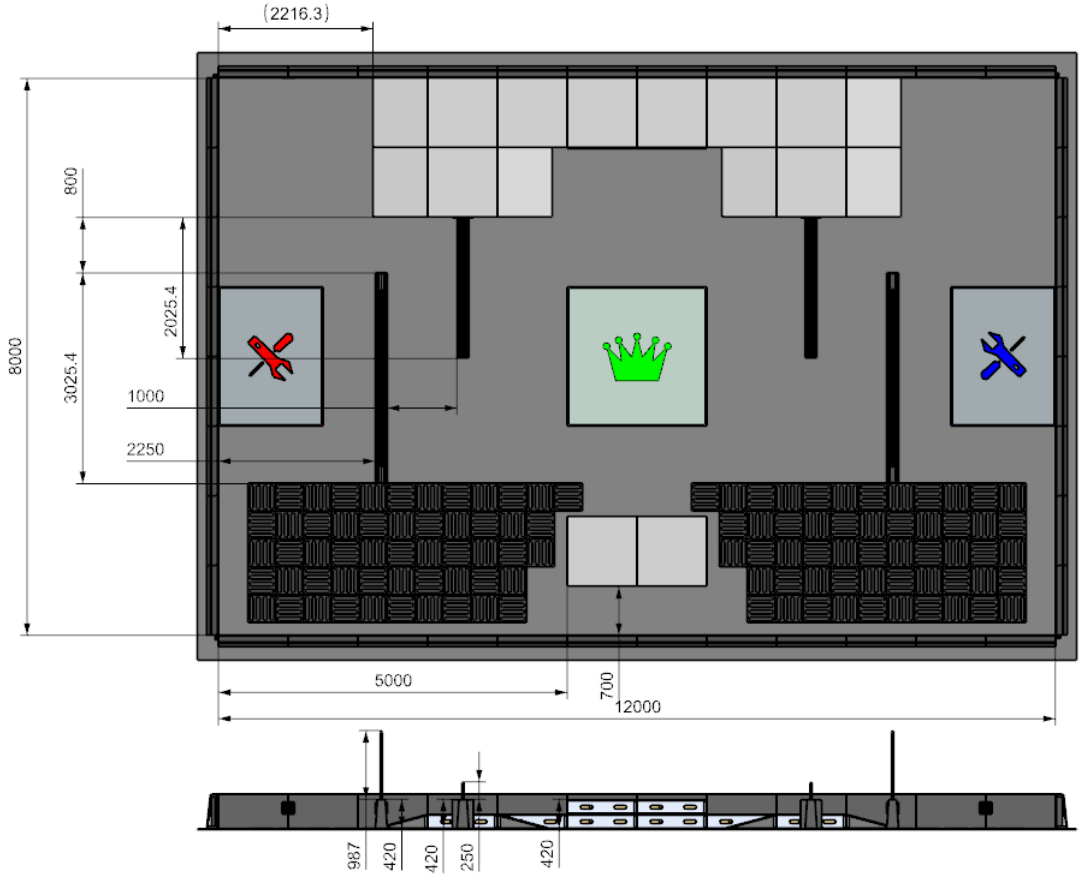



**Figure 3-3: Dimensions of 3v3 Battlefield**

## 3.2.2 Starting Zone and Resupply Zone

The Starting Zone is where robots are placed before a match. The Starting Zone is also used as the Resupply Zone, an important area for projectile purchasing and robot HP recovery, and is inlaid with RFID Interaction Module Cards.

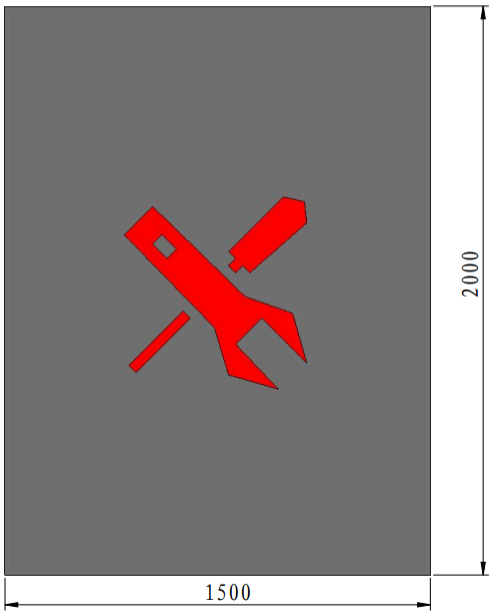



**Figure 3-4: Starting Zone & Resupply Zone**

The Resupply Zone of one team is the Resupply Penalty Zone for the opponent's robots.



**Figure 3-5: Starting Zone & Resupply Penalty Zone**

## 3.2.3 High Ground

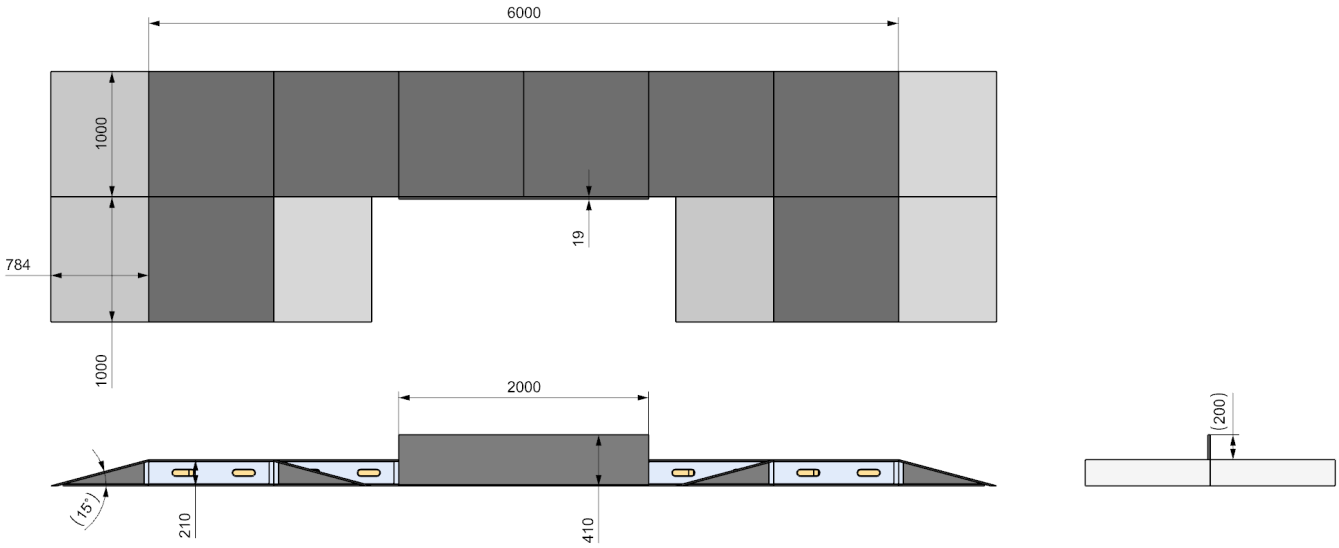



**Figure 3-6: High Ground**

## 3.2.4 Capture Point

The Capture Point is located at the center of the Battlefield and is inlaid with RFID Interaction Module Cards.

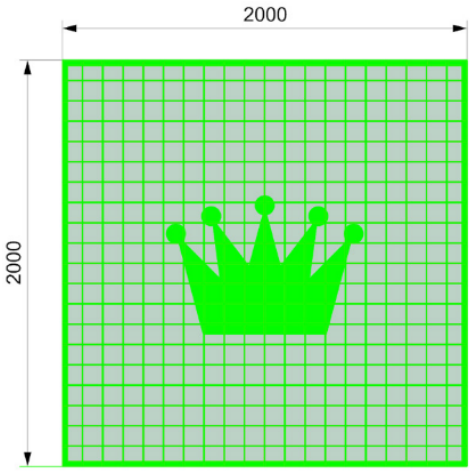
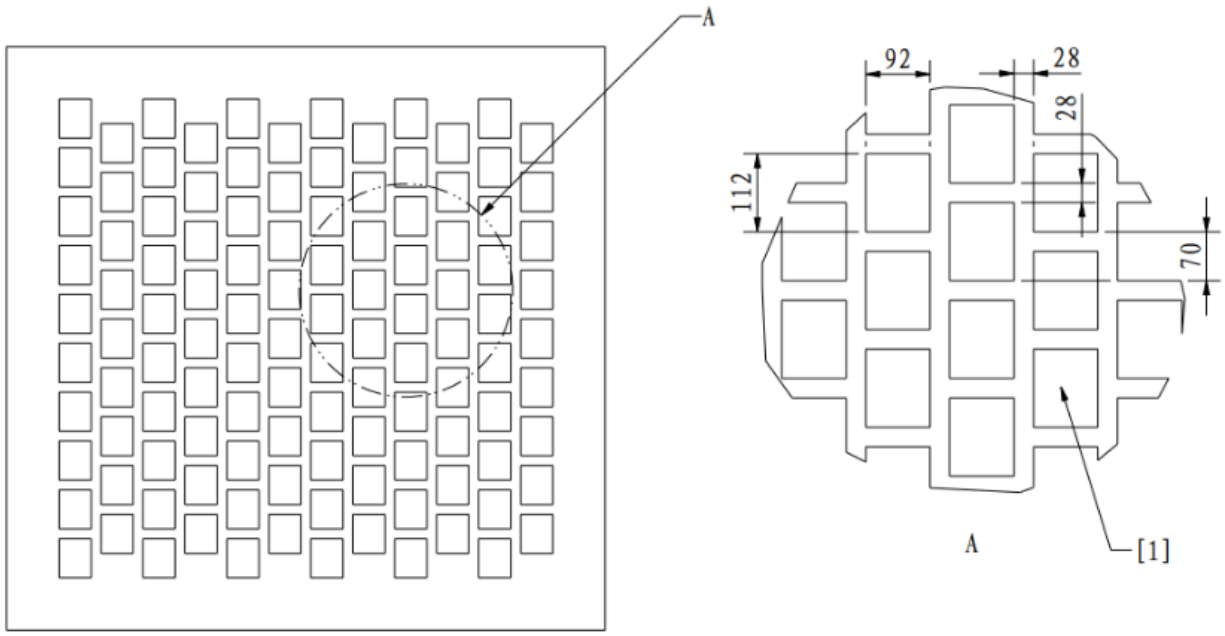



**Figure 3-7: Capture Point**




[1] Location of RFID Interaction Module Card

**Figure 3-8: Layout of RFID Interaction Module Cards**

There may be dead zones within the RFID Interaction Module Cards across the Battlefield. Teams are responsible for adapting to these conditions during gameplay.

An additional layer of flooring will be laid over the RFID interaction zones.

## 3.2.5 Bumpy Road

The Bumpy Road is made of Polyvinyl Chloride and located around the Capture Point. They have evenly spaced bumps on their surface, as shown below.

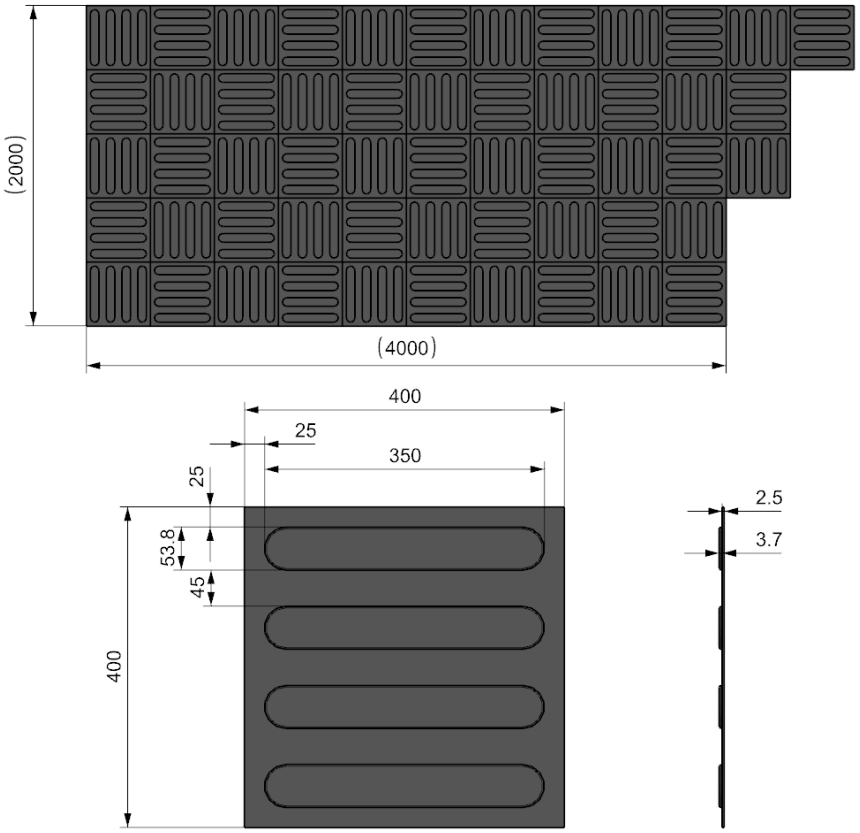



**Figure 3-9: Bumpy Road**

## 3.2.6 Miscellaneous

### 3.2.6.1 Projectiles

Robots deal damage by firing projectiles to attack Armor Modules. The parameters and scenarios of use for projectiles in the competition are as follows:

**Table 3-5: Projectile Parameters and Scenarios of Use**

| Type | Appearance | Color | Dimensions | Weight | Shore Hardness | Material | Where Used |
|---|---|---|---|---|---|---|---|
| 42 mm projectile | Similar to a golf ball | White | 42.5 mm ± 0.5 mm | 41 g ± 1 g | 90 A | TPE Plastic | 3v3 |
| 17 mm projectile | Sphere | Yellow-green | 16.8 mm ± 0.2 mm | 3.2 g ± 0.1 g | 90 A | TPU Plastic | 3v3 and 1v1 |

### 3.2.6.2 Visual Marker

Each Visual Marker is a white-bordered square label with a side length of 150 mm and white words on a black background. Each Visual Marker is different. Visual Markers and their associated IDs can be found in the Visual Marker PDF file.

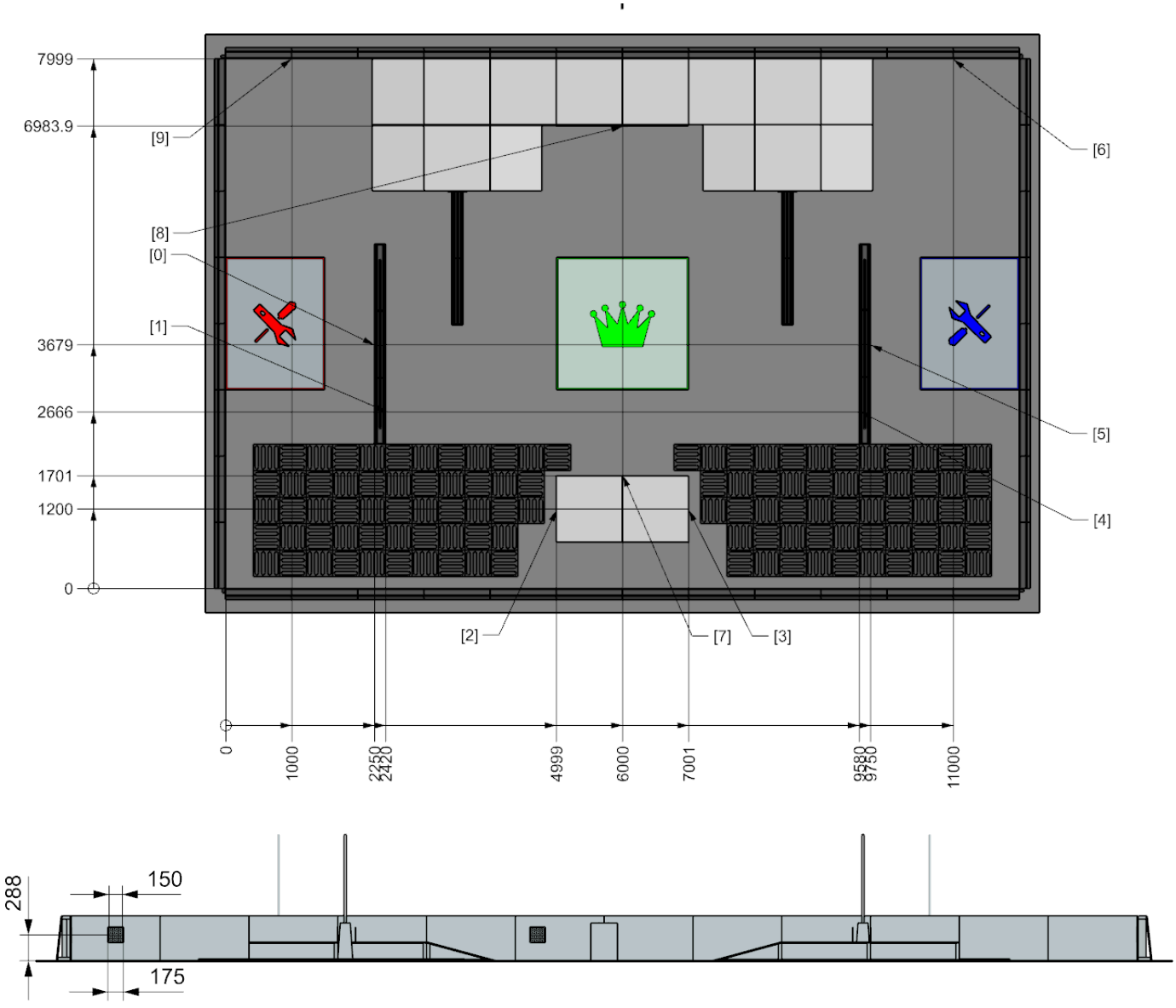



**Figure 3-10: Visual Markers Location. Dimensions shown indicate the center of the front face**

### 3.2.6.3 Pilot Room

The Pilot Room lies outside the Battlefield and is the area for Pilot during the competition. Each Pilot Room is equipped with a corresponding number of computers with official equipment such as a monitor, mouse, keyboard, USB Type-A hub with at least 3 ports, and an RS232 male connector.

# 3.3 Competition Mechanism

## 3.3.1 HP Loss and Penalty for Exceeding Limit

### 3.3.1.1 Attack Damage or Collision

Hero, Infantry, and Sentry Robots may lose HP when their Armor Modules are attacked or collide with other objects. The mechanisms are as follows:

An Armor Module detects projectile attacks through pressure sensors and the vibration frequency on the armor panel. The shortest detection interval for an Armor Module is 50 ms (when an Armor Module is hit with a 42 mm projectile, the detection interval is extended to a maximum of 200 ms).

The projectile needs to come into contact with the impact surface of the Armor Module at a certain speed in order to be successfully detected. The speeds at which Armor Modules can effectively detect projectiles are as follows:

**Table 3-6: Speed Range of Projectiles for Effective Detection by Armor Modules**

| Armor Module | 17mm Projectile | 42mm Projectile |
|---|---|---|
| Large Armor Module, Small Armor Module | Higher than 12 m/s | Higher than 10 m/s |

| | |
|---|---|
| ⚡ | • In an actual match, the normal speed of a projectile that touches the Armor Module attack surface is different from its Projectile Speed due to the projectile's speed decay and its incident angle not being normal to the Armor Module attack surface. Damage detection is based on the normal component of the projectile's speed upon contact with the Armor Module attack surface.<br>• If a Hero does not launch a 42 mm projectile for four consecutive seconds, the Armor Modules of the opponent's robots will become immune to 42 mm projectile damage until the Hero launches a 42 mm projectile again.<br>• The Referee System will round the HP loss to the nearest integer when calculating the HP. |

The Armor Modules of a robot can possibly register collision as projectile damage. However, causing damage through collision (including ramming with robots or throwing objects) is not allowed.

Without buffs, the original damage to Armor Modules shall be as follows:

**Table 3-7: HP Loss Mechanism for Attack Damage**

| 42 mm Projectile | 17 mm Projectile | Collision |
|---|---|---|
| 200 | 20 | 2 |

### 3.3.1.2 Exceeding the Projectile Speed Limit

The Launching Mechanisms of Hero, Infantry, and Sentry will be locked for a certain duration if the robots exceed the Projectile Speed Limit. The duration does not accumulate.

Locks and unlocks due to exceeding the Projectile Speed Limit are independent from locks and unlocks caused by other reasons. Assume the Projectile Speed limit is $V_0$ (m/s), and the actual speed detected by the Referee System is $V_1$ (m/s). The specific lock durations are shown in the table below.

**Table 3-8: Penalty for Exceeding the Projectile Speed Limit**

| 17 mm Projectile | 42 mm Projectile | Lock Duration |
|---|---|---|
| $0 < V_1 - V_0 < 5$ | $V_0 < V_1 \leq 1.1 * V_0$ | 15 seconds |
| $5 \leq V_1 - V_0 < 10$ | $1.1 * V_0 < V_1 \leq 1.2*V_0$ | 20 seconds |
| $10 \leq V_1 - V_0$ | $1.2*V_0 < V_1$ | The remainder of the current round |

### 3.3.1.3 Exceeding Barrel Heat Limit and Cooling

The Launching Mechanisms of Hero, Infantry, and Sentry will be locked when the robots exceed the Barrel Heat Limits. Locks and unlocks due to exceeding the Barrel Heat Limits are independent from locks and unlocks caused by other reasons. The mechanisms are as follows:

Set $Q_0$ as the Barrel Heat Limit and $Q_1$ as the current Barrel Heat. For each 17 mm projectile detected by the Referee System, the current Barrel Heat$Q_1$ is increased by 10 (regardless of the 17 mm projectile's initial speed). For each 42 mm projectile detected, the current Barrel Heat$Q_1$ is increased by 100 (regardless of the 42 mm projectile's initial speed). The Barrel Heat cools at a frequency of 10 Hz. The cooling value per detection cycle is equal to the cooling rate/10.

When $Q_2 > Q_1 > Q_0$, the First-Person-View (FPV) visibility of the robot pilot's computer will be reduced, and the Launching Mechanism of the robot will be locked. These restrictions will remain in place until $Q_1 = 0$.

When $Q_1 > Q_2$, the Launching Mechanism of the robot will be locked for the remainder of the current round.

For a Launching Mechanism (17 mm projectile), $Q_2 = Q_0 + 100$.

For a Launching Mechanism (42 mm projectile), $Q_2 = Q_0 + 200$.

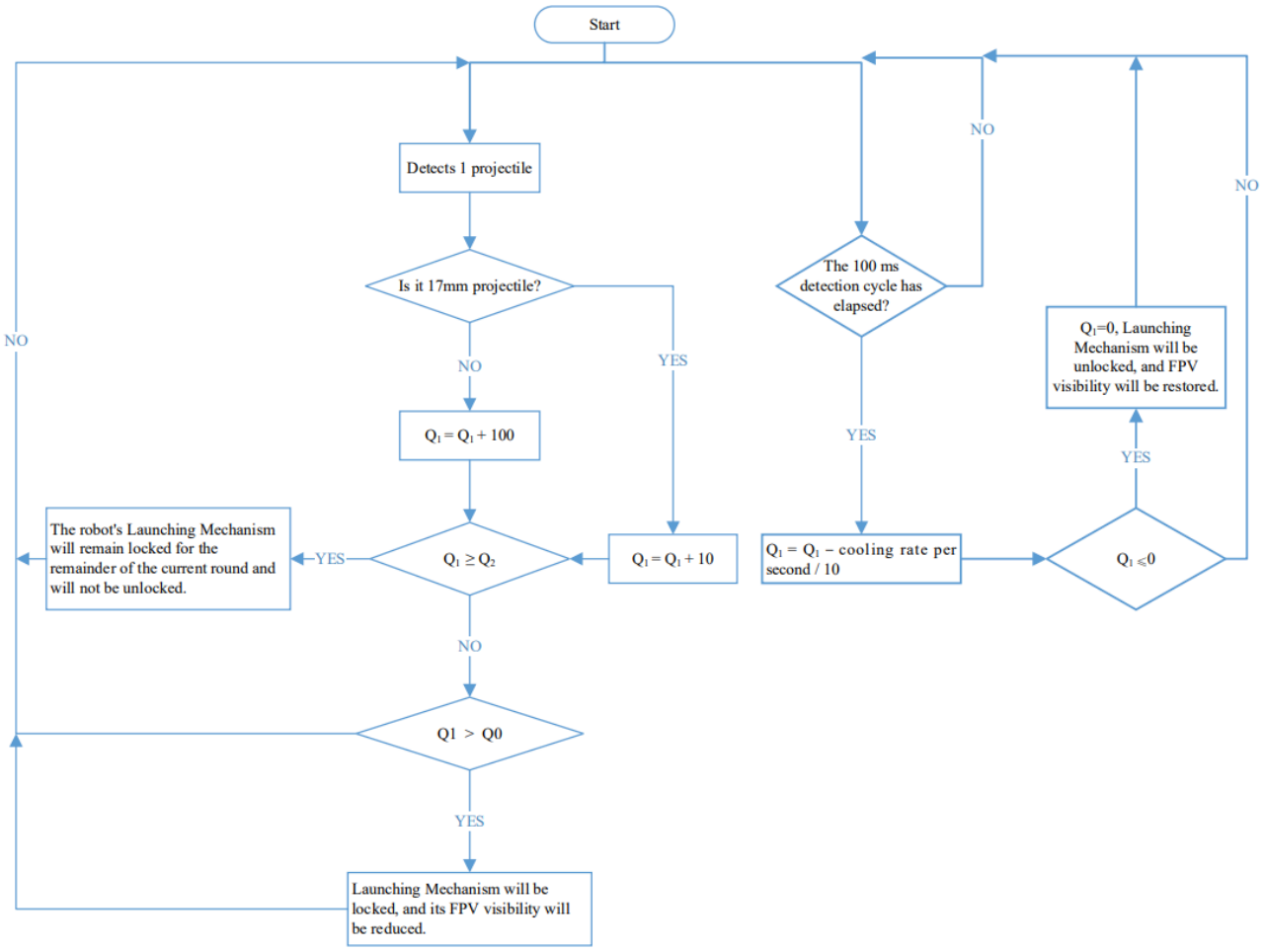



**Figure 3-11: Penalty for Exceeding the Barrel Heat Limit**

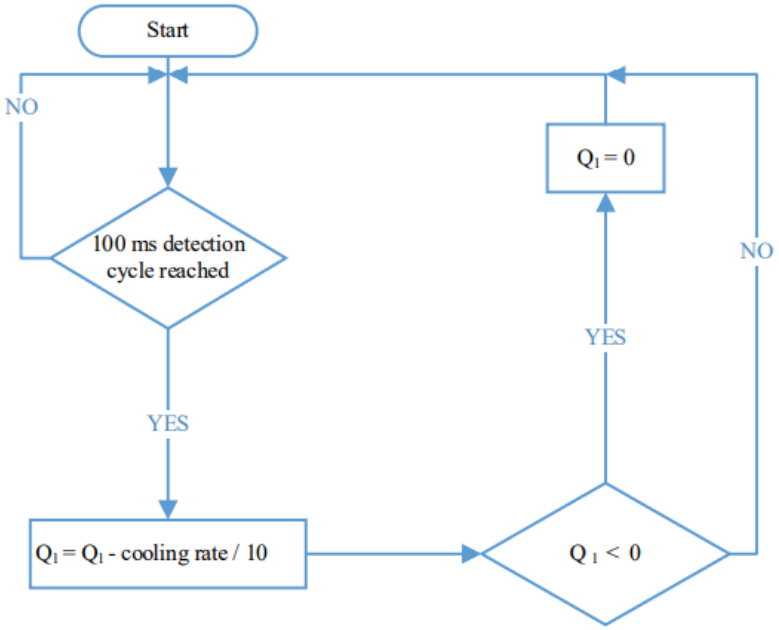


**Figure 3-12: Barrel Heat Cooling Mechanism**

### 3.3.1.4 Exceeding Chassis Power Limit

The chassis power of robots will be continuously monitored by the Referee System, and the robot chassis needs to run within the Chassis Power Limit. Hero, Infantry, and Sentry will have their buffer energy deducted when they exceed the Chassis Power Limit. Upon the exhaustion of buffer energy, if the chassis power is still above the limit, the chassis will be powered off for 5 seconds. The Referee System calculates chassis power consumption at a frequency of 10 Hz.

Set Z as the buffer energy, Q as the Buffer Energy Limit (60 J),$P_r$ as the instantaneous chassis output power, and $P_l$ as the power limit.

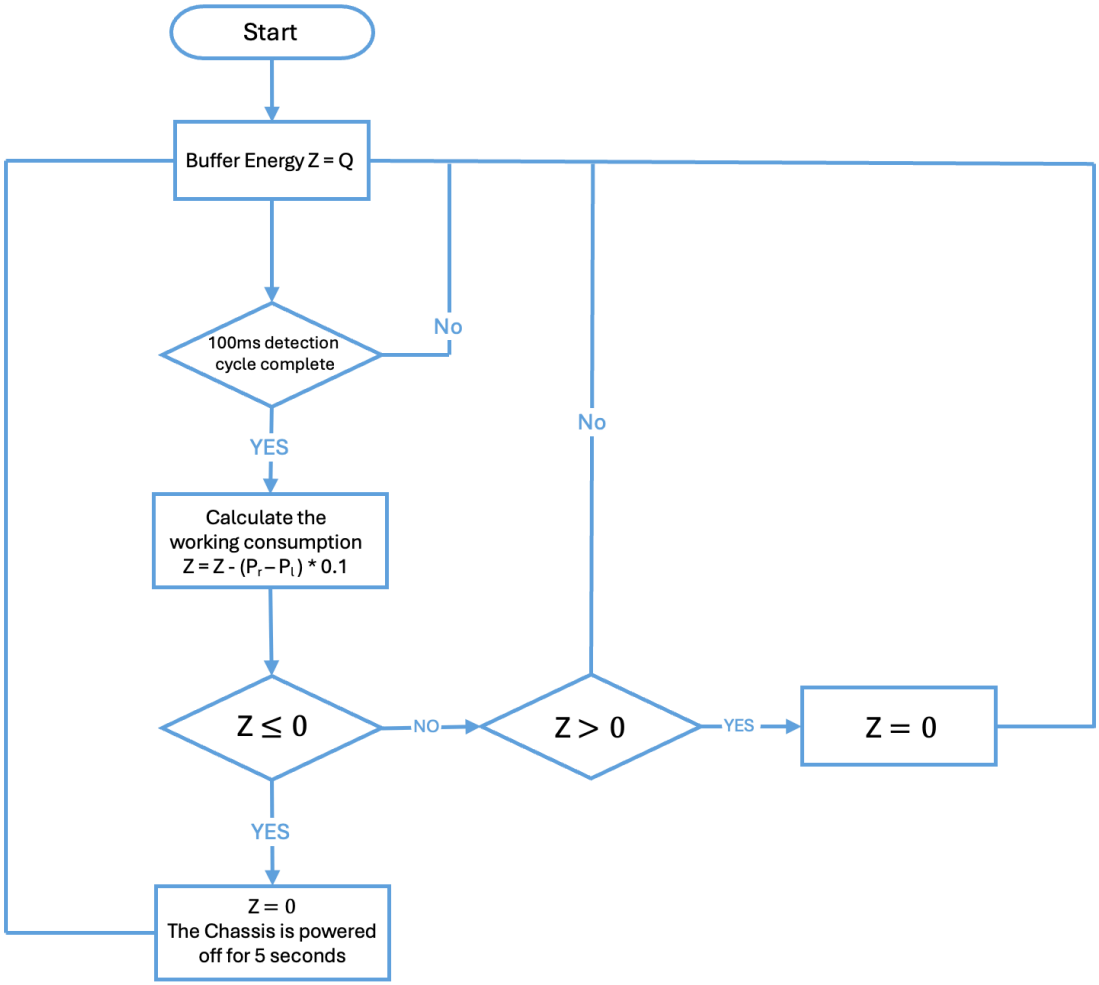



**Figure 3-13: Robot Chassis Power Detection and Penalty for Exceeding Limit**

### 3.3.1.5 Referee System Disconnection

Participating teams must mount the corresponding Referee System modules on their robots in accordance with the requirements of the ARCC 2026 Robot Building Specifications, and ensure stable connection between each module of the Referee System and the server throughout the competition. The Referee System server detects the connectivity of each module at a frequency of 2 Hz.

#### 3.3.1.5.1 Abnormal Disconnection

If the robot's Main Control Module goes offline during the Match, it enters an "Abnormal Disconnect" state, but can reconnect to the competition.

**Table 3-9: Robot Abnormal Disconnection Penalty**

| Robot Type | Consequences of Abnormal Disconnection |
|---|---|
| Hero, Infantry, and Sentry | ● The Launching Mechanism (if present), Gimbal, and Chassis are powered off.<br>● 5% of the Maximum HP is lost for each second elapsed until it drops to zero.<br>● The RFID Interaction Module is disabled.<br>● The robot no longer detects any damage caused by collision, projectile hits, or any other form of HP loss.<br>● The respawn process stops.<br>● The inter-robot communication disconnects. |

#### 3.3.1.5.2 Armor Module or Supercapacitor Management Module Disconnection

If the design or structural design of a robot causes the disconnection of an Armor Module or the Supercapacitor Management Module, the robot will lose HP.

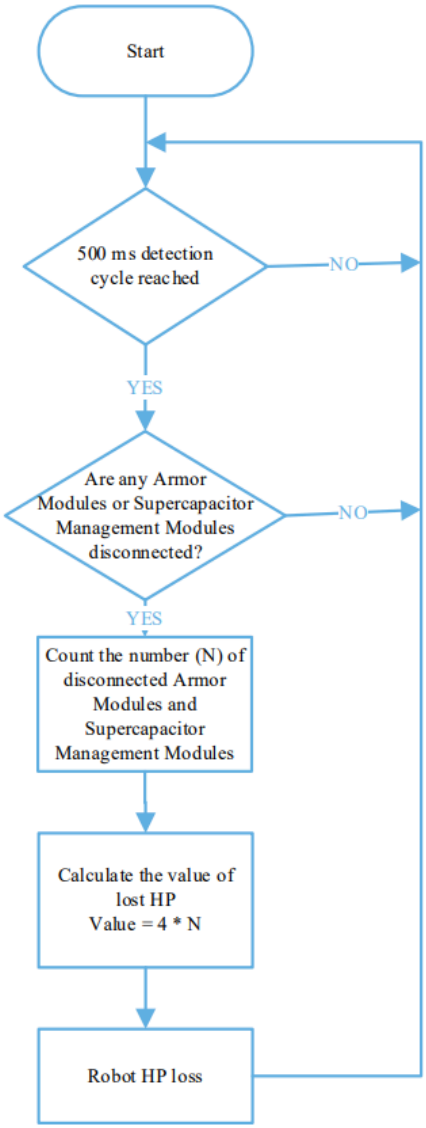



**Figure 3-14: HP Loss Mechanism When Armor Module or Supercapacitor Management Module Is Disconnected**

#### 3.3.1.5.3 Speed Monitor Module Disconnection

If the 17mm or 42mm Speed Monitor Module goes offline, the robots Launching Mechanism will immediately lose power.

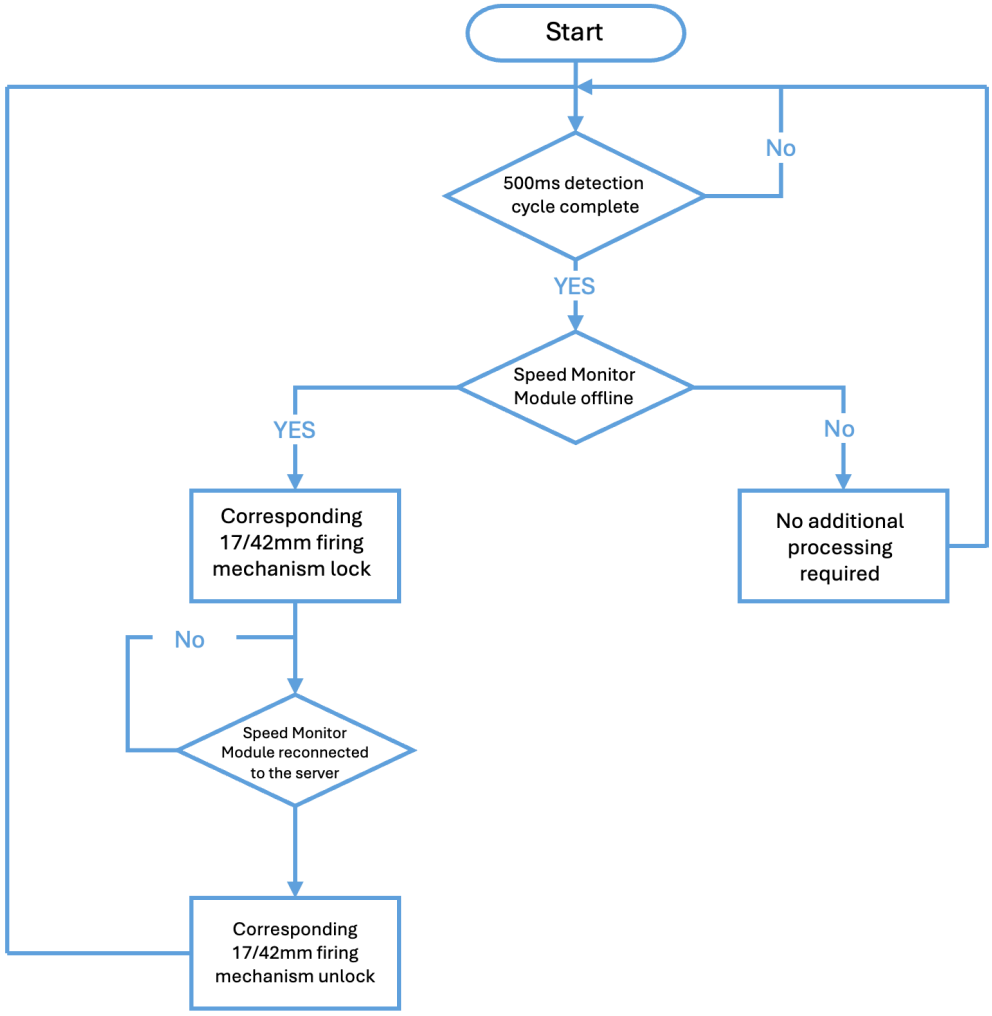



**Figure 3-15: Mechanism for Speed Monitor Module Disconnection and Launching Mechanism Power-Off**

### 3.3.1.6 Penalty Damage

When a Hero, Infantry, or Sentry receives penalties such as a Yellow Card or Red Card, the robot may lose HP. For details, refer to “8.1 Penalty System”

## 3.3.2 HP Recovery and Respawn Mechanism

All robots can recover their HP and respawn unless they are ejected or Abnormally Disconnected.

### 3.3.2.1 HP Recovery Mechanism

When occupying their side’s Resupply Zone, the Hero, Infantry, and Sentry restore 25% of maximum HP per second.

### 3.3.2.2 Respawn Mechanism

Robots respawn automatically upon being defeated, with the following logic:

- The first time a robot respawns it will take 5 seconds.
- Each subsequent time a robot is defeated, respawning takes an additional 5 seconds.

Upon being defeated, robot Barrel Heat resets to 0 and Buffer Energy is reset to its upper limit. After respawning, robots will:

- Have 20% of their maximum HP
- Become Invincible for 30 seconds
- Enter the Weakened state. Weakened Robots:
    - Have their Launching Mechanism locked
    - Cannot capture capture points.

Upon occupying the Resupply Zone, the “Weakened” and “Invincible” states are removed.

## 3.3.3 Economy System

Both teams will receive Gold Coins regularly during the competition. Gold Coins can only be exchanged for Projectile Allowance.

At the start of a Battle, each team receives a certain quantity of initial Gold Coins. As the competition progresses, both sides passively gain Gold Coins as detailed in the table below.

**Table 3-10: Schedule of Passive Gold Coins Gains**

| Game Time | Red Team | Blue Team |
|---|---|---|
| 04:59 | 200 (initial) | 200 (initial) |
| 03:59 | 200 | 200 |
| 02:59 | 200 | 200 |
| 01:59 | 300 | 300 |
| 00:59 | 300 | 300 |

When the difference between two teams’ Victory Points reaches 70 or 140 for the first time, the team with fewer Victory Points will receive 200 Gold Coins. A team can gain a maximum of 400 Gold Coins per round via this mechanism. For details about the Victory Point mechanism, see “3.3.4 Capture Point and Victory Point Mechanisms.”

**Table 3-11: Rules for Exchange**

| Exchange Item | Exchange Ratio |
|---|---|
| 17 mm Projectile | 10 Gold Coins/10 projectiles |
| 42 mm Projectile | 10 Gold Coins/1 projectile |

For every projectile fired by a robot, the Projectile Allowance corresponding to the type of projectiles fired is reduced by one.

In the following special circumstances, the Armor Modules of the opponent's robots will become immune to 42 mm projectile damage until the Hero is alive and has a Projectile Allowance greater than 0:

1. Three seconds after the Hero becomes defeated or abnormally disconnected.
2. When the Hero launches a 42 mm projectile despite having a Projectile Allowance of 0 (it launches more projectiles than its allowance).
3. After the Hero launches the third 42 mm projectile after it is defeated.

While an Infantry or Hero robot has occupied their team's Resupply Zone, its Pilot may exchange Gold Coins for 17mm and 42mm Projectile Allowance via the Referee System player client.

## 3.3.4 Capture Point and Victory Point Mechanisms

The position of Capture Point is shown above in section 3.2.1.

Both teams start with 200 Victory Points. The Capture Point activates after the round starts. The Capture Point can only be occupied by one team (or multiple robots from the same team) at a time. If robots from the two teams are both within the Capture Point, the team that arrives first will occupy the Capture Point. The mechanisms are as follows:

- While a team occupies the Capture Point, the enemy team loses 1 Victory Point per second.
- Each time that a robot is defeated, that team loses 20 Victory Points.

| | |
|---|---|
| ⚡ | If a robot fails to detect the RFID Card in the Capture Point, the occupation will expire after 2 seconds. |

## 3.3.5 Round Winning Criteria

3v3 consists of the Group Stage and the Elimination Stage.

The winning criteria for a single Battle are as below:

1. When one team has 0 Victory Points, the Battle ends immediately, and the winner is the team with nonzero Victory Points.

2. When the duration of a Battle elapses, if neither team has reached 0 Victory Points, the team with the higher Victory Points is the winner.
3. When the duration of a Battle elapses, if the two teams tie on Victory Points, the team that inflicts greater total Attack Damage is the winner.
4. When the duration of a Battle elapses, if the two teams tie on Victory Points, and if the two have inflicted the same Attack Damage, the team with higher total robot remaining HP is the winner.
5. If neither fulfills these criteria, the round is considered a draw. A draw in the Elimination Stage leads to an immediate tie-breaker round until a team wins.

# 4. 1v1

During a two-minute Battle, Infantry robots from both teams engage in a shooting battle on the Battlefield. The team that defeats the other team's robot wins the round.

## 4.1 Robot and Pilot

The required robot and pilot lineup are as follows:

**Table 4-1: Robot and Pilot Lineup: 1v1**

| Robot Type | ID No. | Quantity (set) | Pilot Lineup |
|---|---|---|---|
| Infantry | 3 | 1 | 1 Pilot/Robot |

- At the end of each round, the Pilot can be replaced by another member of the pit crew of the current match.

### 4.1.1 Infantry

**Table 4-2: Key Features of Infantry**

| Key Features | Descriptions |
|---|---|
| Initial Zone | Starting Zone |
| Operating Mode | No restrictions. Up to one remote controller and one custom controller. |
| Inter-robot Communication | Not applicable |
| Launching Mechanism | One Launching Mechanism (17mm projectile) |
| Projectile Speed Limit | 25m/s |
| Performance | • Initial/Maximum HP: 200<br>• Maximum Barrel Heat: 80<br>• Barrel Heat Cooling Rate: 12/s<br>• Chassis Power Limit (W): 120 |
| HP Loss and Penalty for Exceeding Limit | • Exceeding the Projectile Speed Limit: Applicable<br>• Exceeding Barrel Heat Limit and Cooling: Applicable<br>• Chassis Power Overlimit: Applicable<br>• Attack Damage and Collision: Applicable<br>• Referee System Disconnection: Applicable<br>• Penalty Damage: Applicable<br>For details, see "3.3.1 HP Loss and Penalty for Exceeding Limit." |

| | |
|---|---|
| HP Recovery and Respawn Mechanism | Not applicable |
| Projectile Loading | • During the Two-Minute Setup Period, 17mm projectiles can be preloaded.<br>• During the Two-Minute Battle, the Initial Projectile Allowance is 200 and cannot be increased. |

## 4.2 Competition Area

The core competition area of 1v1 is called the Battlefield. The Battlefield is a 5m * 5m area that contains the Starting Zones of the red and blue teams. For details about projectiles and the Pilot Room, see “3.2.6.1 Projectiles” and “3.2.6.3 Pilot Room”.

The as-built battlefield may vary from the below model and drawing and may be updated in a future release.

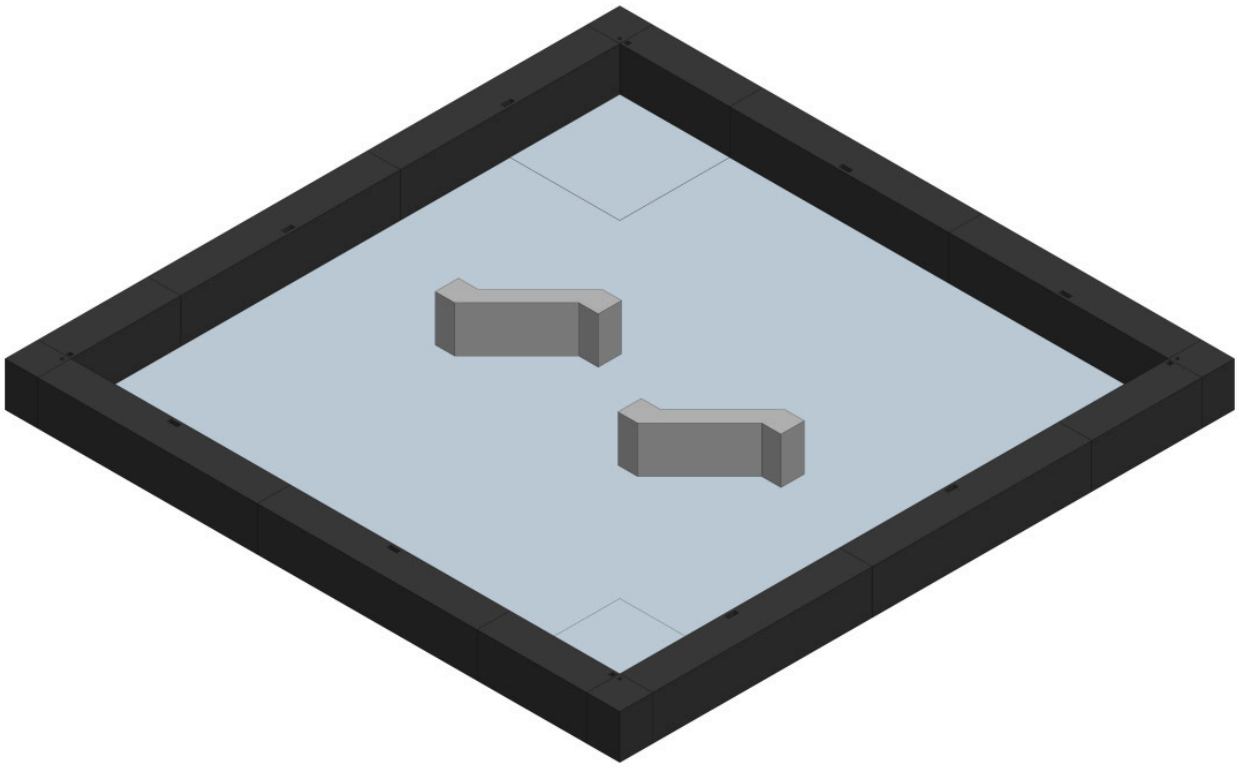
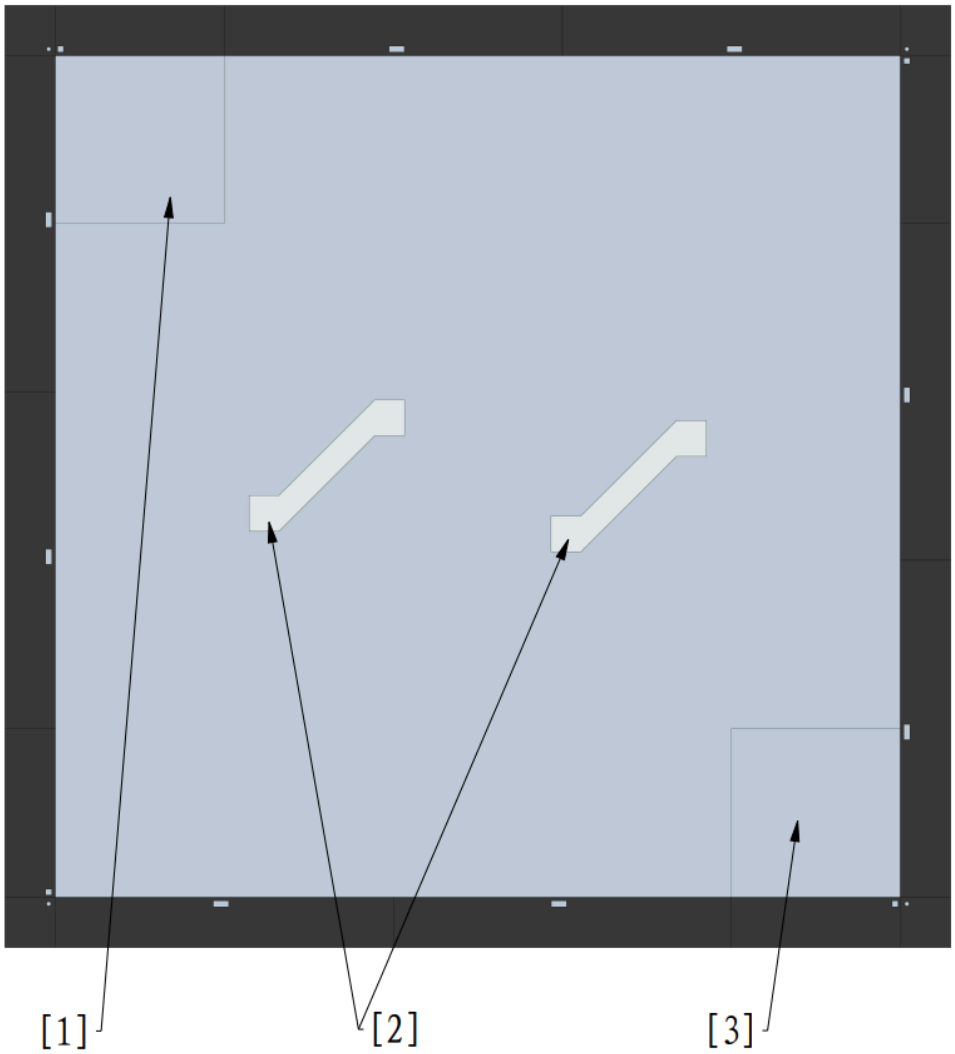


**Figure 4-1: Axonometric View of 1v1 Battlefield**




[1] Red Team’s Starting Zone

[2] Bunker

[3] Blue Team’s Starting Zone

**Figure 4-2: Top View of 1v1 Battlefield**

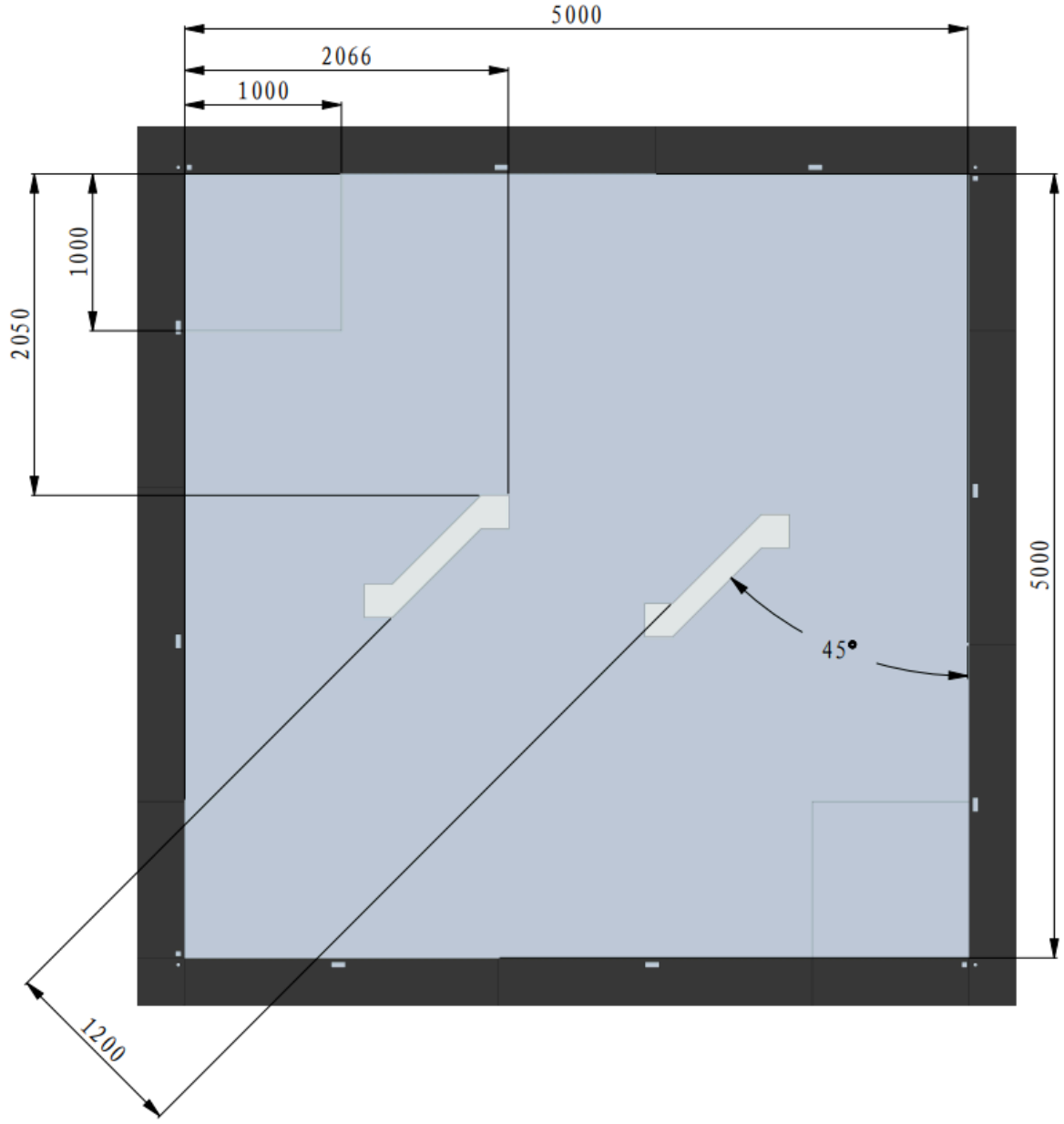



**Figure 4-3: Dimensions of 1v1 Battlefield**

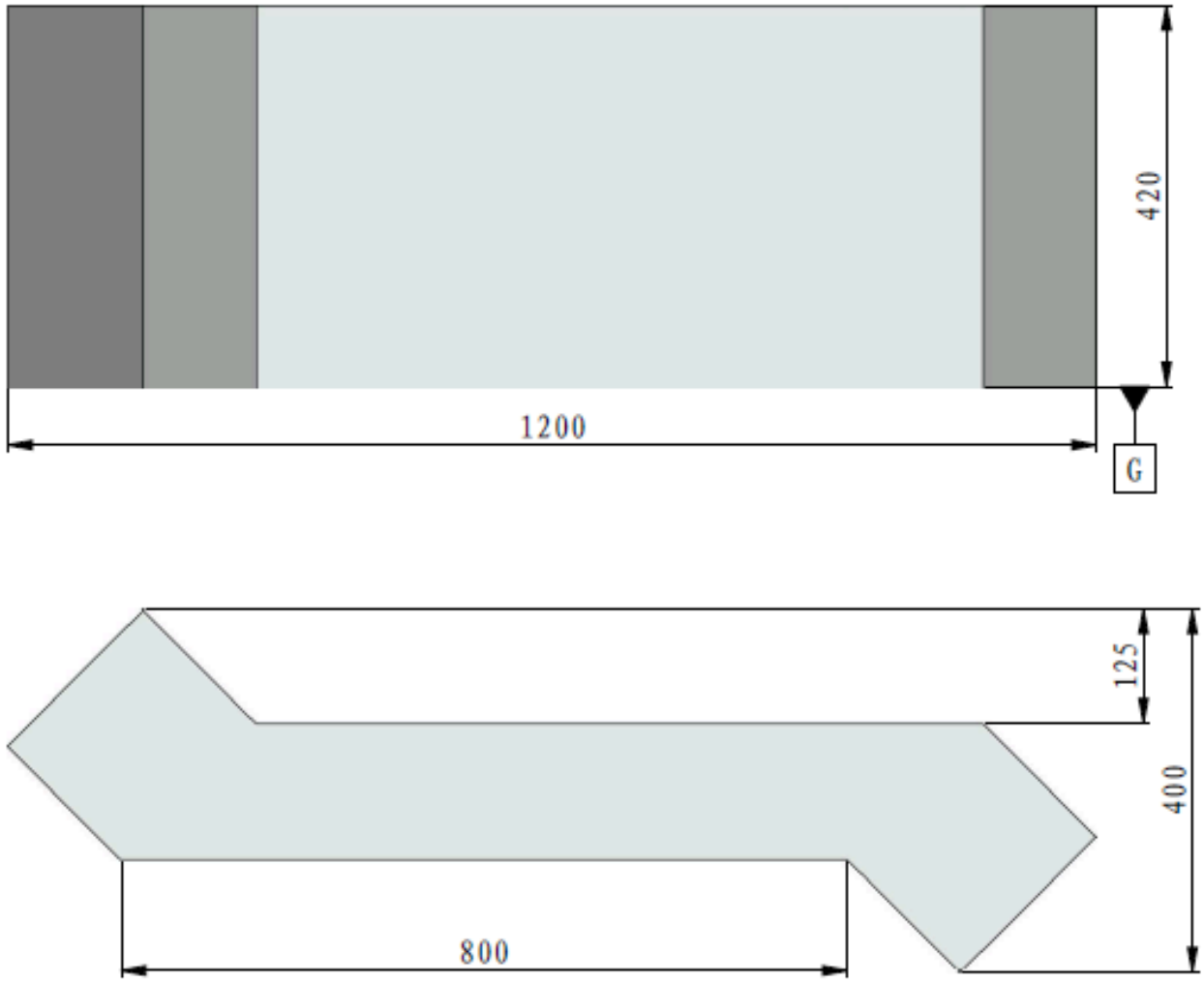



**Figure 4-4: Bunker**

# 4.3 Competition Mechanism

## 4.3.1 HP Loss and Penalty for Exceeding Limit

For details, see 3.3.1 HP Loss and Penalty for Exceeding Limit.

# 4.4 Competition Format and Winning Criteria

1v1 competition consists of a Group Stage and an Elimination Stage. The competition format of Group Stage is BO2, and that of Elimination Stage is BO3. The winning criteria follow the below order to determine a winner.

1. During the match, a robot attacks the Armor Modules of the opponent robot until its HP drops to zero.
2. If neither robot is defeated within the time limit, the team with more remaining HP wins.
3. If neither robot is defeated within the time limit, and have equal remaining HP, the team who does not take the first damage of the round wins.
4. If both robots have full HP when the match time expires, the team with the higher total number of shots fired wins.
5. If both robots have full HP when the match time expires, and both teams have fired the same number of shots, the side that fired first wins.
6. If both robots have full HP when the match time expires, and neither team has fired any shots, then the robot with less weight wins.

| | |
|---|---|
| ⚡ | The weight of the robot is measured during the Pre-Match inspection. |

7. If a tie still occurs, the round is considered a draw. A draw in the Elimination Stage leads to an immediate tie-breaker round until a team wins.

# 5. Engineer Challenge

During the Four-Minute Mission, the Engineer acquires and exchanges Ores in the core competition area. Teams with higher scores are ranked higher. The Mission is composed of two portions: Autonomous and Human Piloted.

## 5.1 Robot and Pilot

The required robot and pilot lineup are as follows:

**Table 5-1: Robot and Pilot Lineup: Engineer Challenge**

| Type | No. | Quantity | Pilot Lineup |
|---|---|---|---|
| Engineer | 2 | 1 | 1 Pilot/Robot |

- Up to one remote controller and one Custom Controller can be configured for an Engineer.

## 5.2 Competition Area

The core Battlefield for the Engineer Challenge is a 5m * 5m area, consisting of the Starting Zone, Resource Island, and Exchange Station.

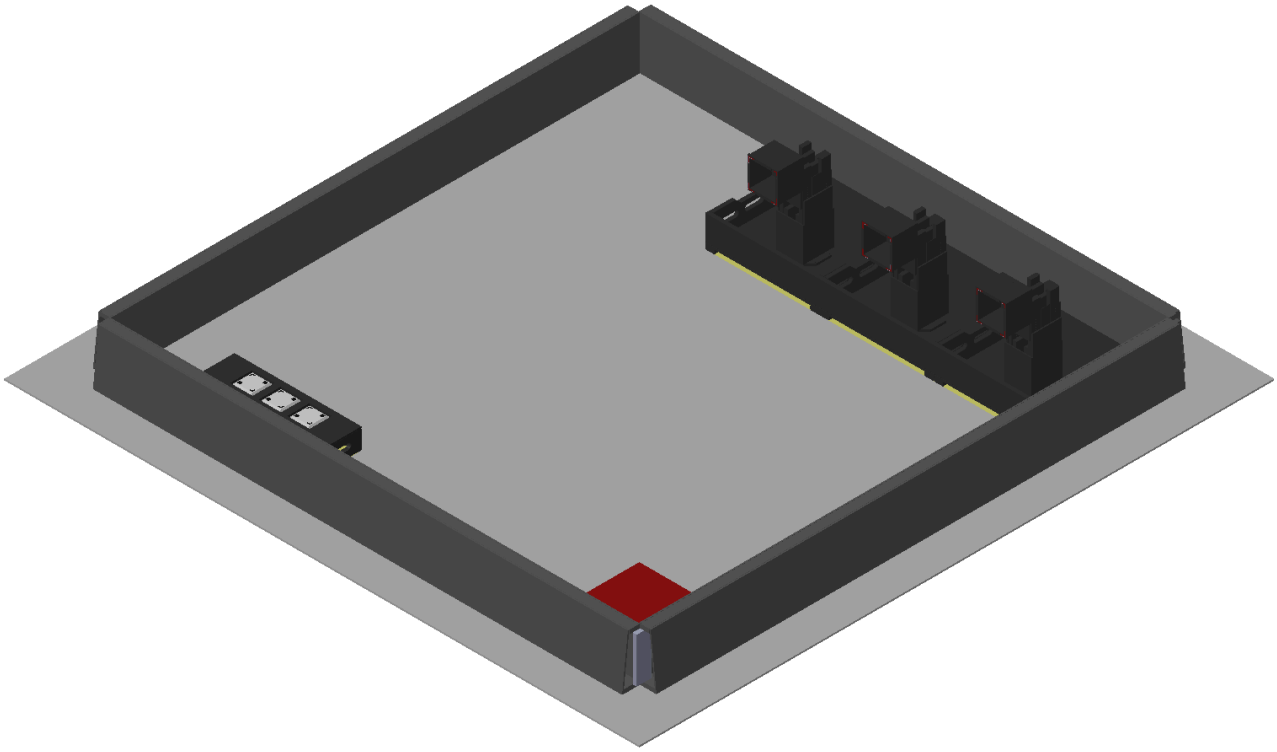
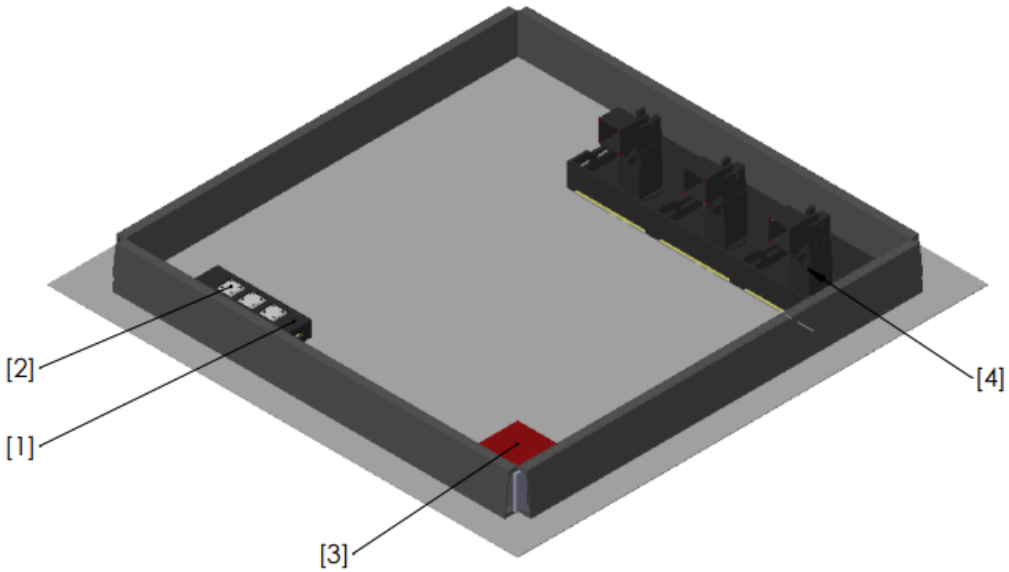


**Figure 5-1: Axonometric View of the Engineer Challenge Battlefield**




[1] Resource Island

[2] Ore

[3] Starting Zone

[4] Exchange Station

**Figure 5-2: Modules of Engineer Challenge Battlefield**

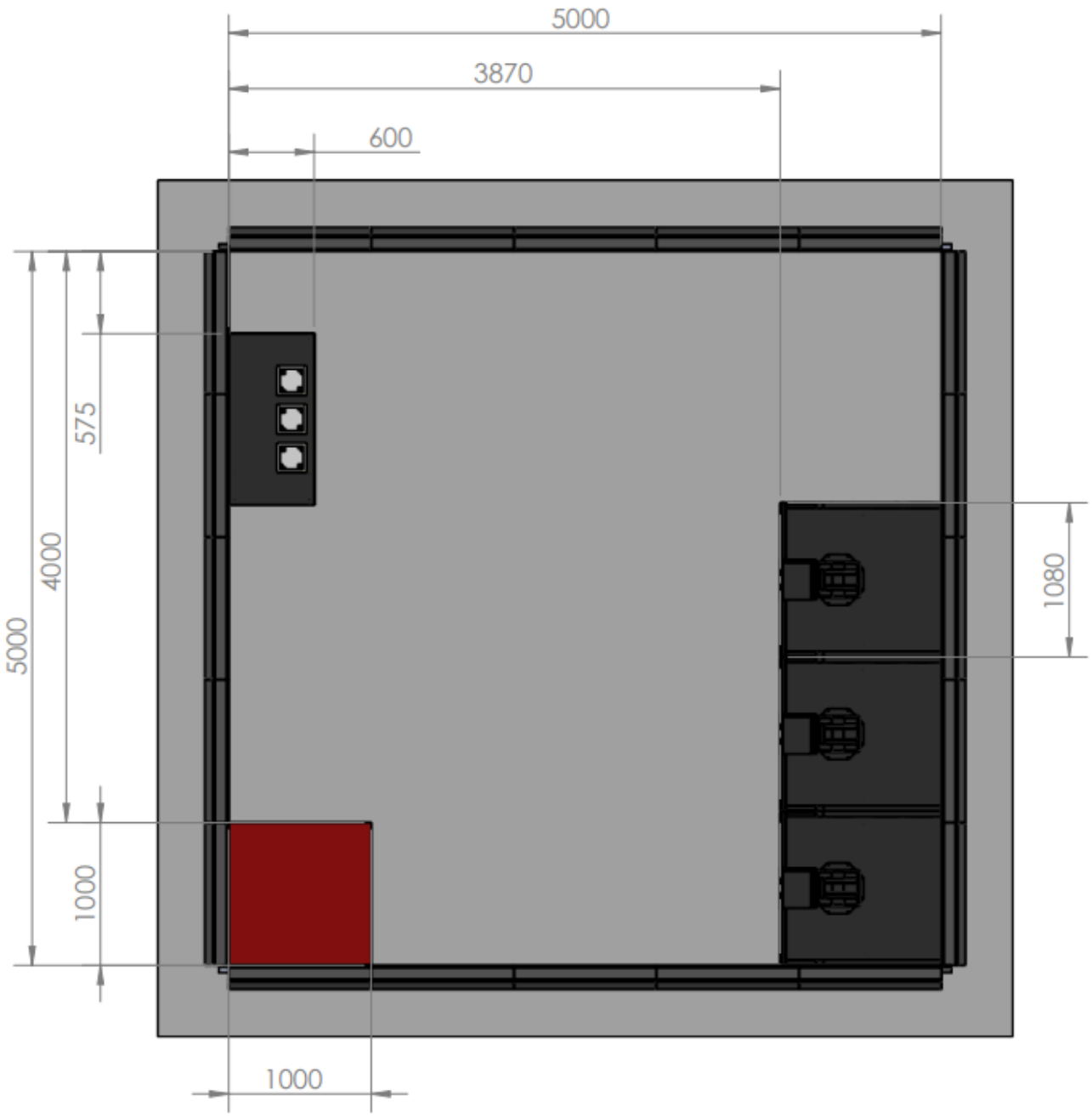



**Figure 5-3: Dimensions of Engineer Challenge Battlefield**

### 5.2.1 Starting Zone

The Staring Zone is where the Engineer is placed before a match.

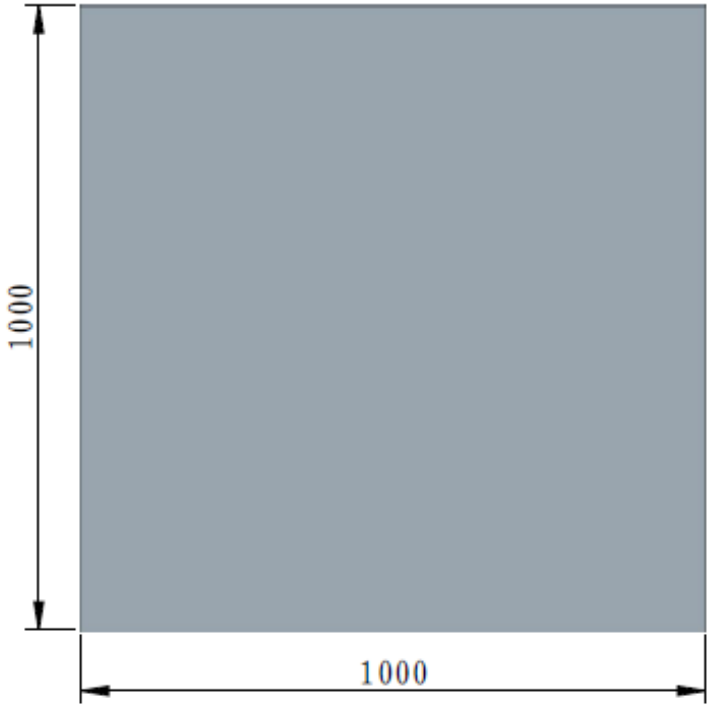



**Figure 5-4: Starting Zone**

## 5.2.2 Resource Island

Three Silver Ores are placed on the Resource Island.

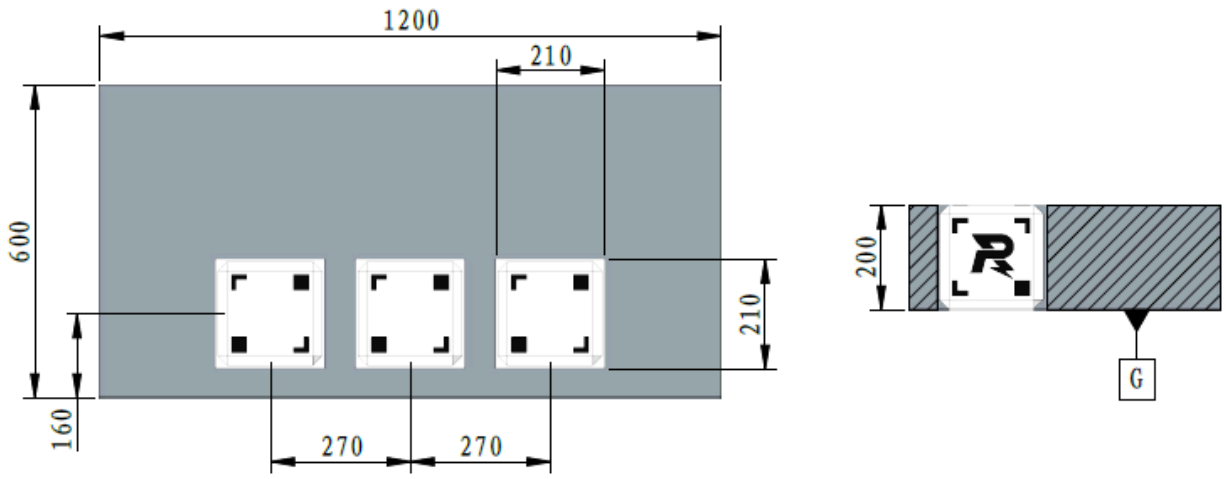



**Figure 5-5: Resource Island**

- The Ores are placed with the barcode side facing down but may be rotated by multiples of 90° around the vertical axis.

An Ore is an EVA cube with beveled edges. It measures 200 × 200 × 200 mm (L × W × H) in size, with a mass of 550 to 650 g, and hardness of 38±5 HC. All Ores have the same bar code pattern. Due to variations in the manufacturing process, the surface roughness of Ores may vary significantly. The reference value of the surface roughness (Sa) of an Ore's screen print area is 30-40 μm. The reference value of the surface roughness (Sa) of an Ore's non-screen print area is 12-16 μm. Ore may have slight wear and tear due to normal use.

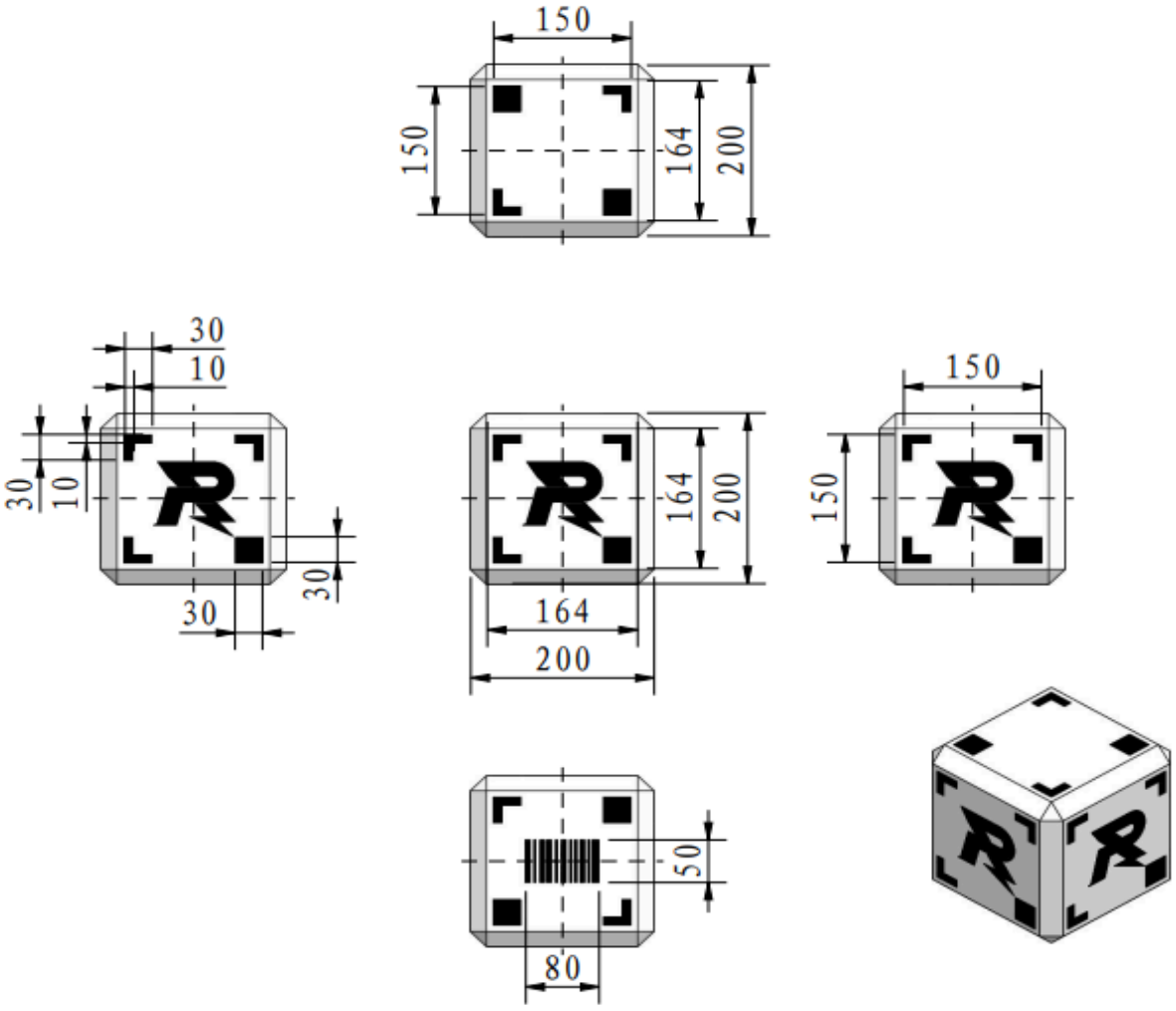



**Figure 5-6: Ore**

## 5.2.3 Exchange Station

The Exchange Station is the area where robots exchange Ores. The Exchange Station comprises three separate Ore Receptacles with different poses. For each Ore Receptacle, define a right-handed Cartesian coordinate system called the Exchange Station coordinate system OXYZ: The middle point of the intersecting edge between the front of the Exchange Station Base and the Battlefield ground shall be the origin “O”. The direction towards the Ore collecting slot from the normal line to the front plane of the Base shall be the negative x-axis, while the upward vertical direction shall be the positive z-axis. A right-hand orthogonal coordinate system EX'Y'Z' is established using the geometric center of the Ore Receptacle’s entry plane as the origin E. The X', Y', and Z' axes align parallel to and share consistent positive directions with the X, Y, and Z axes, respectively. The unit normal vector of the Ore Receptacle’s entry plane is $\vec{e}$. A spherical coordinate system (r, θ, φ) is set up based on the Ore Receptacle coordinate system. In this system, θ represents the angle between $\vec{e}$’s projection on the X'Y' plane and the positive X' axis, with θ in the range of [-180, 180). φ denotes the angle between $\vec{e}$ and the positive Z' axis, falling within (0, 180). α represents the Ore Receptacle’s rotation angle around the $\vec{e}$ direction, where counterclockwise rotation assigns a positive value to α.

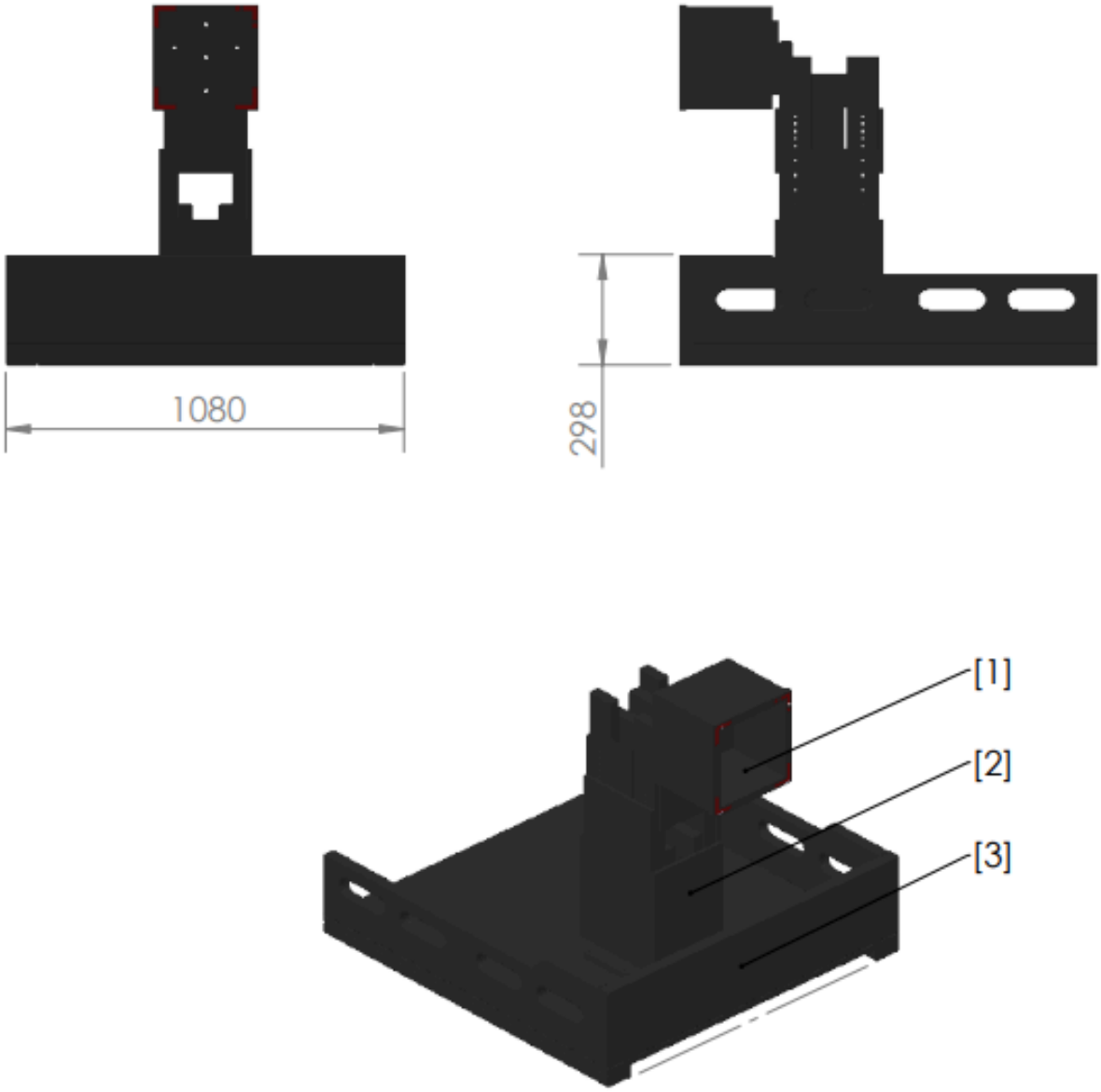
The pose of the Ore Receptacle is defined by the coordinates (x, y, z) of the central point of the entry plane of the Ore Receptacle (E) in the OXYZ system, combined with the coordinates (θ, φ) of the unit normal vector $\vec{e}$ in the Ore Receptacle spherical coordinate system, and the rotation of the Ore Receptacle around the $\vec{e}$ direction (α). This set of parameters is expressed as (x, y, z, θ, φ, α).

The poses of the three Ore Receptacles at the Exchange Station are fixed and will not change.

The ranges of the Ore Receptacle pose parameters are given in the table below

**Table 5-2: Pose Ranges of Different Ore Receptacles**

| Ore Receptacle | x | y | z | θ | φ | α |
|---|---|---|---|---|---|---|
| A | 0 | 0 | 830 | 0 | 90 | 0 |
| B | 0 | [-100,100] | [710, 910] | 0 | 90 | [-45,45] |
| C | 0 | [-100,100] | [710, 910] | [0, 90] | 90 | [-45,45] |




[1] Ore Receptacle

[2] Main body of Exchange Station

[3] Guard

**Figure 5-7: Exchange Station**

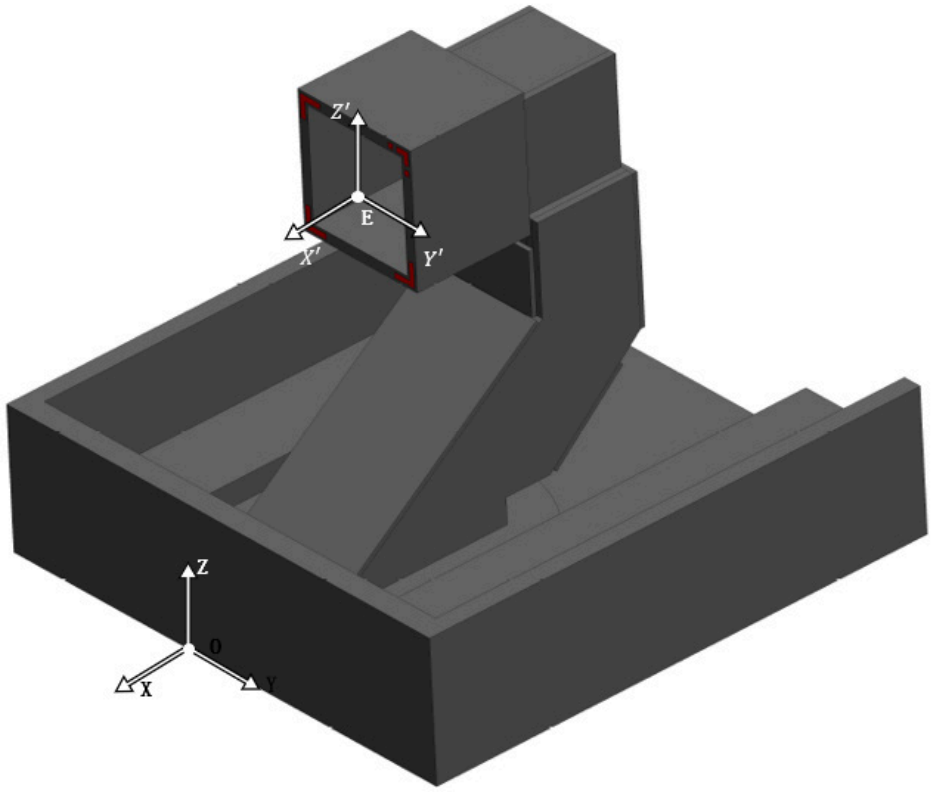



**Figure 5-8: Coordinate Systems of the Exchange Station**

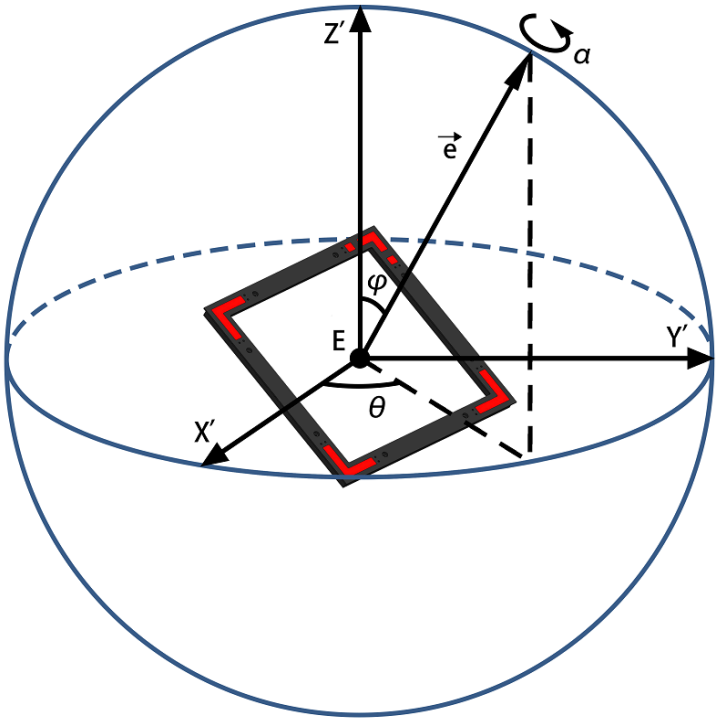



**Figure 5-9: Ore Receptacle's Direction**

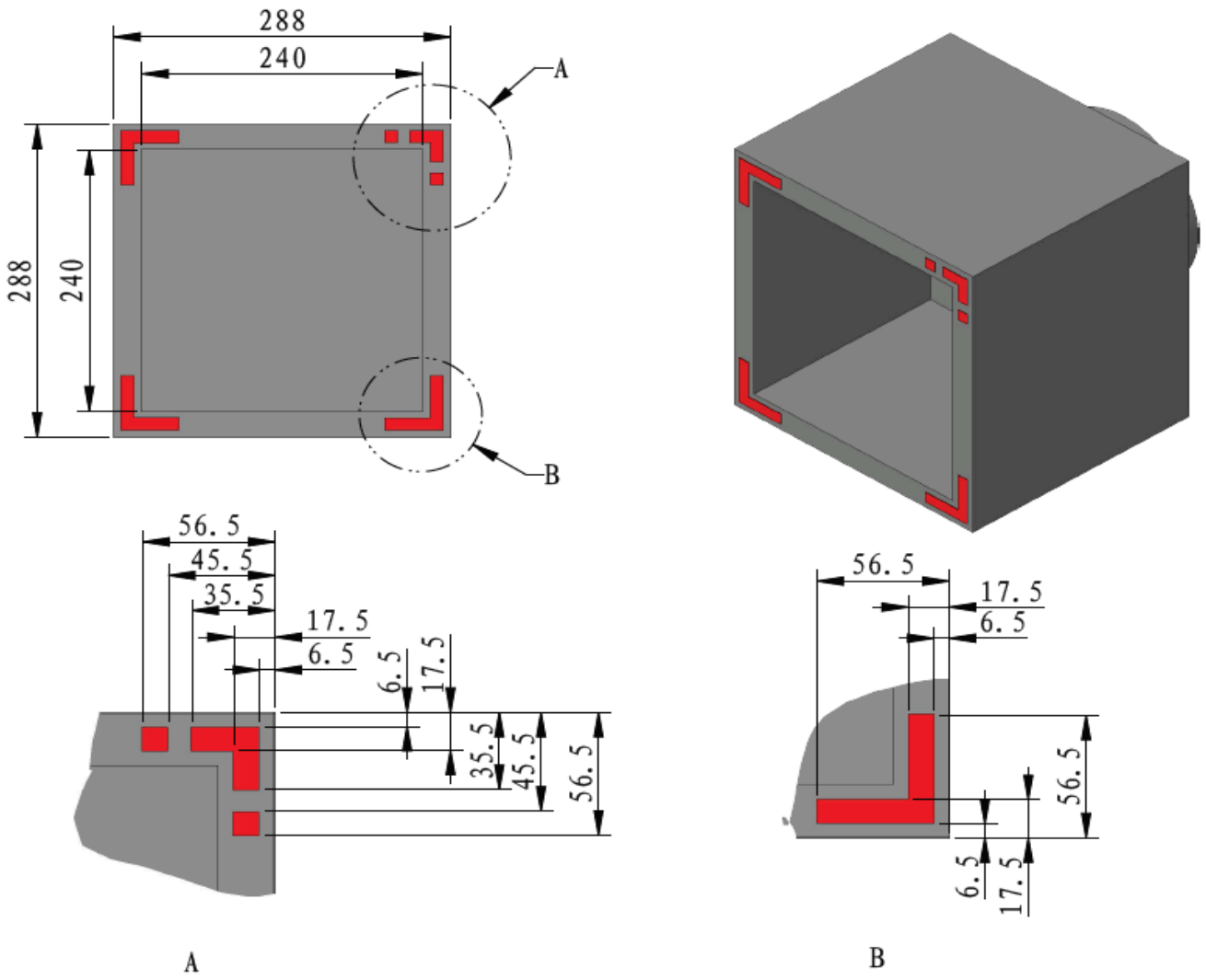



**Figure 5-10: Ore Receptacle**

| | |
|---|---|
| ⚡ | The red sections in the figures represent decorations, not light effects.<br>The Exchange Station, Ore Receptacles and Resource Island are painted matte black. |

## 5.3 Mission

The Engineer stands by in the Starting Zone before the match.

After the match starts, the Engineer needs to procure Ore from the Resource Island and place it in the Exchange Station to complete an exchange. The match ends after all the Ores have been successfully placed in the Exchange Station and the robot returns to the Starting Zone, or when the match time runs out.

- It is prohibited to place multiple Ores in the same Ore Receptacle.
- There is no requirement for the orientation of Ores when they are put into the Ore Receptacle.
- The exchange is completed when an Ore is entirely placed in the Ore Receptacle without the risk of spontaneously falling from the Receptacle.

By the end of the setup period, the engineer remote must be placed into the designated area in the pilot room and unplugged from the Client USB cable. After the 5-second countdown the match will begin. This marks the start of the autonomous period. During the autonomous period, the pilot is not permitted to touch the remote, or else the autonomous period will end. Once the autonomous period ends, it cannot be restarted.

The Engineer pilot is allowed to pick up the remote at any time after the Battle begins. This begins the human-piloted portion of the Battle. Upon touching the remote, they can begin to pilot the robot.

### 5.3.1 Scoring

An ore is scored when the following criteria are met:

- The robot must complete the scoring attempt by doing one of the following:
    - Fully returning to the start zone. All parts of the robot must lie within the infinite vertical projection of the start zone to be considered fully returned.
    - Beginning a new scoring attempt by touching a cube in possession of the robot to any part of a different receptacle. A cube is in the possession of a robot if the cube is touching any part of the robot.
- A ore is considered scored if it remains in the receptacle on its own at the end of the Battle.

The Ores placed in Ore Receptacles A, B, and C are scored separately using different rules. Details are as follows:

**Table 5-3: Points Earned for Scored Ores**

| Ore Receptacle | Points for each Ore scored Manually | Points for each Ore scored Autonomously |
|---|---|---|
| **A** | 1 | 10 |
| **B** | 10 | 100 |
| **C** | 100 | 1000 |

The scoring attempt must be completed autonomously to count as an autonomous score.

If the exchange of all three Ores is successfully completed before the time of the match runs out, 1 additional point is awarded for each second remaining in the match.

| | |
|---|---|
| ⚡ | When the match time runs out, if the robot is not fully in the Starting Zone, the last exchanged Ore will not be counted for scoring. |

## 5.3.2 Ranking

- Each team can attempt the challenge three times.
- The final score of the team is the average of the two highest round scores.
- If two or more teams tie with each other, the team whose robot is lighter will be ranked higher (Robot weight is based on the Pre-Match Inspection measurement).

# 6. ARC Technical Innovation Conference [ARCTIC]

## 6.1 ARCTIC Presentation

*Note: This section covers the live presentation aspect of ARCTIC. For more details about submission, please refer to the ARCC Participant Manual.*

### 6.1.1 Presentation Requirements

The ARTIC Presentations will occur during ARCC. For each accepted presentation, up to 3 presenters may present. Each presentation will be allotted 30 minutes total including Q&A. It is recommended that teams allocate 20 minutes for the presentation and 10 minutes for Q&A. Presenters do not need to fill their entire time slot, but they may not exceed it. Presenters will present a slideshow to a live audience of participants and guests, a panel of judges, and online viewers via the event livestream.

### 6.1.2 Format

Presentations will occur using a classroom-style projector screen or TV display. The presentation computer will be provided by ARC Staff. ARC Staff will pre-load your Final Submission presentation for you.

A wireless presentation remote will be provided, though presenters may bring their own laser pointers, clickers, or other presentation aids themselves. At least 1 USB-A port will be made available for interfacing.

Presenters may also choose to bring physical hardware or props to accompany their presentation. Audience interaction is not prohibited, but presenters should carefully consider the impacts to presentation quality.

# 7. Competition Process

In the Engineer Challenge, each attempt is called a Match, regardless of whether or not they are played back-to-back.

In the following section the below terminology is used to describe the pre-match locations.

**Table 7-1: Match Location Definitions**

| Name | Location | Description |
|---|---|---|
| L3 | After Inspection | Teams who have completed Pre-Match Inspection wait in L3 to be escorted to L2. |
| L2 | Near the Battlefield | Occupied by multiple teams queued up for upcoming matches |
| L1 | Adjacent to Battlefield Entrance | Occupied by the team playing/about to play the current match. |

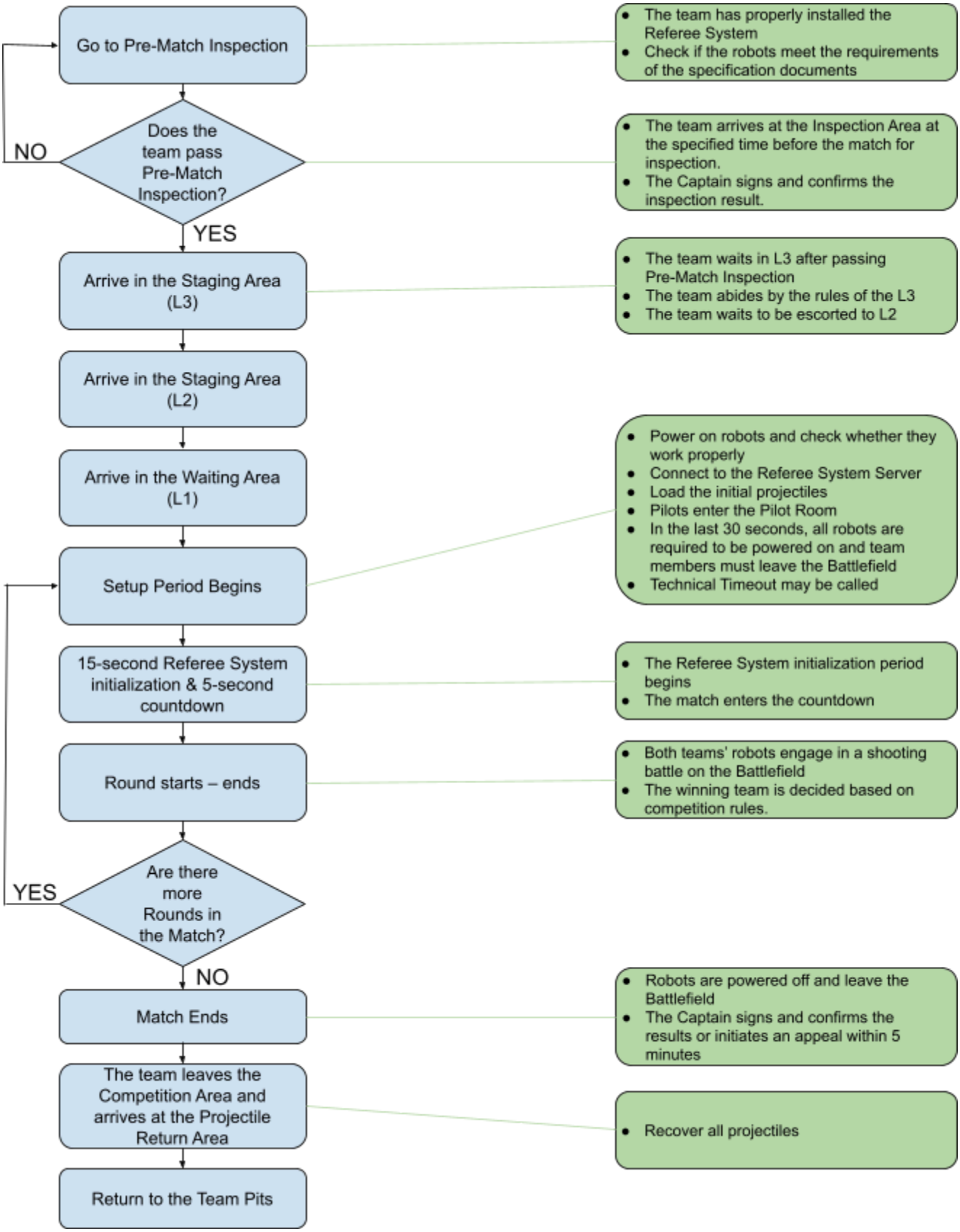



**Figure 7-1: Process of a Single Match**

## 7.1 Pit Crew Allowances

The total number of team members allowed into the inspection area shall not exceed the limit outlined in Table 7-2. The extra Pit Crew Members shall travel immediately to the L3 Staging area and wait for their team to complete inspection. Once a team and robot enters Pre-Match Inspection, no further team members may join, nor any further equipment may be given to the team.

The total number of Pit Crew Members allowed in the L3 staging area through to Projectile Return is outlined in Table 7-2.

| | |
|---|---|
| ⚡ | Captain Badge: Any Regular Member that wears the Captain Badge performs the Captain role during the match. The Captain is responsible for leading the team in the competition process, confirming results, and requesting timeouts, appeals, etc. |

Starting from Inspection until the team leaves the Competition Area, one Pit Crew Member should wear the Captain Badge and undertake the Captain's role. At check-in, teams will be issued Captain, Pit Crew, and Pilot badges corresponding to their registered events. Participants who are not wearing the proper badge in the required areas will be asked to leave.

**Table 7-2: Pit Crew Allowance in Inspection + Competition Area**

| Match Type | Total Number of Members Allowed in Inspection | Total Number of Pit Crew Members |
|---|---|---|
| 3v3 | 4 | 8 |
| 1v1 | 2 | 4 |
| Engineer | 2 | 4 |

- Pilots and Captains count toward Pit Crew allowance.

## 7.2 Pre-Match Inspection

| | |
|---|---|
| ⚡ | • Teams must pass inspection before each match.<br>• Passing of inspection only means that the robot meets the standards at the time of inspection. Teams are required to ensure that their robots fulfill the requirements of the ARCC 2026 Robot Building Specification at all times. |

In order to make sure that the robots built by participating teams conform to the requirements in the ARCC Robot Building Specifications, 3v3, 1v1, and Engineer Challenge teams must arrive at the inspection area 60, 40, and 30 minutes in advance, respectively, for Pre-Match Inspection. If the team does not arrive at inspection with at least the aforementioned time before their match, they shall bear all consequences.

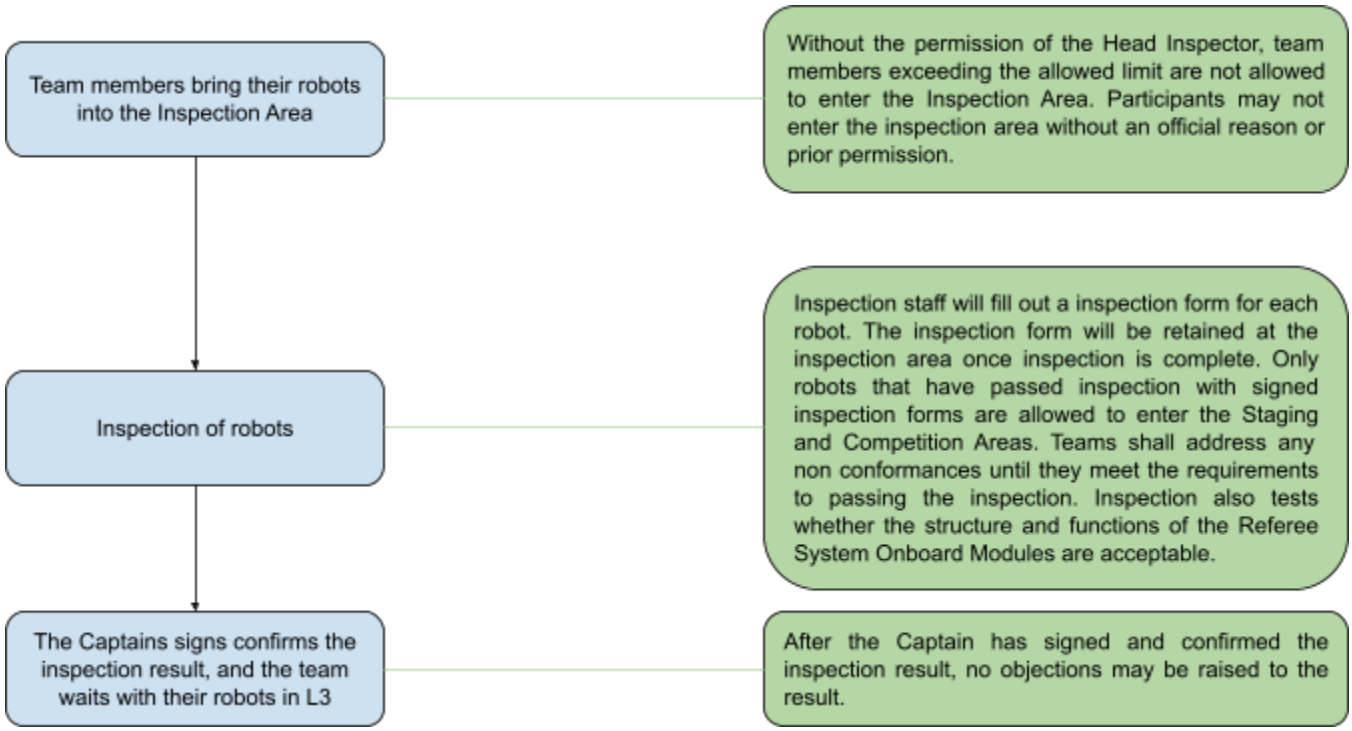



**Figure 7-2: Pre-Match Inspection Process**

The rules regarding backup robots are as follows:

- Each team can carry no more than 4 robots for the Pre-Match Inspection prior to 3v3, and no more than 2 robots for 1v1 and Engineer Challenge respectively.
- Each team can carry no more than one backup robot for each round of competition.
- Team members are required to declare the types of backup robots they are carrying during the Pre-Match Inspection. While a given robot may meet both specifications for a Sentry or Infantry, the backup robot type must be chosen by the Team during inspection for staff to ensure the robot type is configured correctly in the referee system. Backup robots shall be affixed with armor stickers in the Inspection Area. Armor stickers must be affixed in accordance with the requirements stated in the ARCC 2026 Robot Building Specifications.

Across all ARCC events, each team can borrow at most one backup robot's Referee System.

## 7.3 L3 and L2 Staging Areas

After the Pre-Match Inspection, the Pit Crew Members and Robots must wait in the L3 staging area. They will be escorted by staff from the L3 Staging area to the L2 Staging Area. Neither Pit Crew Members nor Robots may leave either the L3 or L2 Staging Area without explicit permission from a Referee.

If any team needs to repair its robots inside the L3 or L2 Staging Area, they must obtain permission from Inspection staff or a referee. A robot may leave a Staging Area for repair only after the staff at the Staging Area have revoked the inspection status of the robot. When repair is finished, the robot needs

to be brought back to repeat Pre-Match Inspection before re-entering a Staging Area. If the team is unable to arrive at the Staging Area in time as a result of this delay, the robot will not be able to enter the match, and the team will bear the consequences.

At the direction of the Field Referee, the Pit Crews will enter the L1 waiting area to place their robots. The Pit Crews will wait at the entrances of the Battlefield with their robots for further instructions. Pit Crew Members should not enter the Battlefield or commission their Robots without explicit direction from the Field Referee. The referees will open the doors and lead the Pit Crews into the competition area. The countdown for the Setup Period will begin when the doors are opened.

## 7.4 Setup Period

The Setup Period for 3v3 is three minutes, and two minutes for 1v1 and Engineer Challenge. During the Setup Period, Pit Crew Members need to place their robots in their teams Resupply Zones, check whether their Referee Systems are operating normally, and if applicable, pre-load the robots with projectiles. Pit Crew Members may repair robots or replace equivalent parts, provided the requirements of the specifications documents are met. Pit Crew Members are required to commission their robots within their team's Resupply Zone. Robots are not allowed to leave the Resupply Zone. Pit Crew Members must remain within their teams half of the Battlefield or their L1 Waiting Area.

| | |
|---|---|
| ⚡ | • Equivalent parts: Standard modules or components having the same material, form and functions, for example, motors of the same model and self-built friction wheel modules. The main structure supporting the robot's body, such as a robot's chassis or the body of a Drone, cannot be replaced as equivalent parts.<br>• If the equivalent part includes the Referee System Module, the participating team must ensure that the Referee System Onboard Module works properly, including version number, sensor calibration, and Mounting Specifications. If the Referee System Module(s) in the equivalent part experiences an abnormality, it will not trigger an Official Timeout. |

90 seconds before the Setup Period ends, the pilot(s) are advised to enter the Pilot Room to complete commissioning for the keyboard and mouse (both can be brought by the pilots), and double-check whether the robot controls and official equipment are operating properly. USB Keyboards and Mice connected to the control room computers must be produced by legitimate manufacturers with valid manufacturer certifications and no modifications. All keyboards and mice must comply with the USB HID protocol without any computer-side firmware or software. If any official equipment does not operate normally, the Pit Crew Members must raise the issue before entering the final 15 seconds of the Setup Period. Otherwise, no timeouts will be allowed by the referee. Only pilots from the team are allowed into the Pilot Room, Pit Crew Members must remain outside.

When the Setup Period is down to 30 seconds, all robots in the Battlefield must be powered up, robots that are not powered up must be removed from the Battlefield, and the staff in the Battlefield should leave the Competition Area in an orderly manner. After the end of the Setup Period, 3v3 Pit Crew must place the Sentry's remote controller in the designated area at the Battlefield entrance, and Engineer Challenge Pilots must put the Engineer's remote controller in the designated area in the pilot room and may not plug the remote into the pilot station.

## 7.4.1 Official Timeout

During the Setup Period, if the Referee System or equipment inside the Pilot Room malfunctions (for details, see the table below), or the robot needs additional Inspection, the Head Referee can announce an Official Timeout and pause the setup countdown. The starting time of the Timeout is decided by the Head Referee based on the situation.

During an Official Timeout, Pit Crew Members cannot fix the malfunctions of the Referee System or other official equipment unless the fix is required by the referee. If a replacement is needed for a malfunctioning Referee System, replace the Referee System Onboard Modules within the time limit specified in the ARCC 2026 Robot Building Specification. When the relevant malfunctions of the Referee System or official equipment have been eliminated and the Head Referee has resumed the countdown, Pit Crew Members are required to follow the set procedures for the Three-Minute Setup Period and leave the Battlefield within the specified time.

**Table 7-3: Malfunctions**

| Rule | Description |
|---|---|
| **1** | A fault occurs with the official equipment in the Pilot Room, and any key competition component in the Battlefield experiences structural damage or functional irregularity |
| **2** | During the Setup Period of the first round, a Referee System Onboard Module experiences faults, such as damage to the Armor Module, Speed Monitor Module disconnection, etc. |
| **3** | During the Setup Period, the main controller of the Referee System is unable to connect to the server or a robot cannot transmit images to the Pilot Room. |
| **4** | Other situations where the Head Referee deems it necessary to call an Official Timeout. |

As it is impossible to determine whether the malfunction stems from the Referee System module itself, flaws in the robot's electrical or structural design, or damage caused during previous matches, an Official Timeout will not be called for regular battle damage, except for the situations mentioned in Rule 3 above. The referee will provide backup Referee System modules. Participating teams may request a "Team Timeout" to repair their robots.

If the referee determines that the malfunction referred to in Rules 2 and 3 above is caused by the team, the referee will explain the situation and end the Official Timeout.

### 7.4.2 Team Timeout

If the mechanical structure of a robot, a software system, the keyboard or mouse brought by the team in the Pilot Room or other team equipment experiences any faults, the team Captain may make a request to the referee in the Battlefield or Pilot Room for a “Team Timeout” only before the 15-second countdown in the Setup Period, and indicate the requested timeout length and reasons for the request. Once a Team Timeout is requested and conveyed to the Head Referee it cannot be canceled or revised.

After the Team Timeout is confirmed by the Head Referee, the Referee will notify both teams at the same time regardless of which team initiated the timeout. Both teams are then permitted to use the full duration of the timeout as they see fit.

The Head Referee may end the Team Timeout once they determine that the teams are ready. Even if the participating team does not enter the Battlefield or ends the Timeout early, the timeout opportunity is still consumed.

To ensure that subsequent matches begin on time, only one Team Timeout is allowed in each Setup Period on a first-come, first-served basis. The Timeout usage is recorded in the Match Results Confirmation Form.

During a 3v3 or 1v1 Match, each team has 2x two-minute Timeout opportunities for each Event. During an Engineer Challenge, each team has 1x two-minute Timeout opportunity. A team cannot request Team Timeout once their opportunities have been used up.

## 7.5 15-Second Referee System Initialization Period

After the Setup Period, the match enters a 15-Second Referee System Initialization Period. During the Initialization Period, the Referee System server automatically detects the connection status of the Referee System player’s client, the status of Referee System Onboard Modules, and reset the HP of all robots to ensure their HP is full when the match officially begins.

## 7.6 5-Second Countdown

After the 15-Second Referee System Initialization Period, the match enters a 5-Second Countdown. At this time, the Referee System player’s client will not respond to control commands from robots (including Custom Controllers). Once the countdown ends, the keyboard is unlocked and the competition starts.

# 7.7 Battle

## 3v3 and 1v1

Robots from both teams engage in a shooting battle on the Battlefield, the core competition area.

## Engineer Challenge

The Engineer completes the mission, comprised of the Autonomous and Human-Piloted periods.

# 7.8 End of Round

## 3v3 and 1v1

When the time of the Battle runs out or one team triggers the winning criteria, this round of competition ends. The match is over when a winner has emerged or all rounds have ended.

## Engineer Challenge

A Battle ends when its time has run out or teams fulfill the criteria for ending the challenge early.

# 7.9 Results Confirmation

During a match, the referee will record on the Match Results Confirmation Form the penalties issued for each round, the key competition data at the end of the match, the winning teams, the use of Timeout opportunities by the teams, and other relevant details.

If the team Captains do not agree with the match results and wish to launch an Appeal, they must do so within 5 minutes of the end of the match (starting from the beginning of the ‘Exit the Field’ period of the final round). Once 5 minutes have elapsed, it is assumed that both Teams accept the match results. Team Captains may verify the match result at the Referee desk, but no confirmation action is required.

# 7.10 Exit the Field

After a match is over, members from both teams in 3v3, 1v1 and Engineer Challenge must power off all their robots and remove them from the Battlefield. Teams participating in 3v3 and 1v1 must proceed to the Projectile Unloading Area to unload their projectiles. At the Projectile Unloading Area, teams must follow the instructions of the staff to empty the projectiles in their robots, and return all projectiles used in the competition.

# 8. Violations and Penalties

In order to ensure the fairness of the competition and maintain competition discipline, the participating teams, participants, and participating robots must strictly follow the competition rules. If there is a violation, the referee will give a corresponding penalty for the violation. Some violation penalties issued before the official start of the competition will be enforced after the official start of the competition. All serious violations and all appeals in the competition will be publicized.

Penalty for violations stated in this chapter will be determined by the Head Referee according to the actual situation. If an event that affects competition fairness happens during the competition but it does not involve penalty rules or serious violations, the Head Referee will make a decision based on the actual situation.

| | |
|---|---|
| ⚡ | If a team's actions have directly caused the other team to commit a violation, the other team is not penalized but must cease its violating behavior immediately |

## 8.1 Penalty System

### 8.1.1 Forms of Penalties

During a match, the referee may issue penalties against participants and robots that have failed to comply with competition rules. The forms of penalties are as follows.

**Table 8-1: Forms of Penalties**

| Form of Penalty | Description |
|---|---|
| Automatic penalties by the Referee System | All HP losses in "3.3.1 HP Loss Mechanism." except those caused by attacks or collision and the penalty damage, are automatic penalties by the Referee System. |
| Manual penalties through the Referee System | Penalties issued by the referee through the server against robots for violation of rules. |
| Manual penalties by human referees | Where penalties cannot be issued through the Referee System, for example issuing a verbal warning or disqualifying a team. |

## 8.1.2 Types of Penalties

The types of manual penalties are as shown below:

**Table 8-2: Types of Penalties**

<table>
<tr><th>Type of Penalties</th><th>Description</th></tr>
<tr><td>Verbal Warning</td><td>● A Referee verbally explains the situation and cause of the penalty.<br>● A Referee gives instructions on what to do to resolve the penalty-causing behavior.</td></tr>
<tr><td>Yellow Card</td><td>● One team receives a Yellow Card:<br>○ If the offending robot is a Sentry, its chassis will be powered off for 2 seconds while the operating interface of other alive robots will be obstructed for 2 seconds.<br>○ If the offending robot is not a Sentry, the operating interface for the offending robot is blocked for 5 seconds and those of other robots are blocked for 2 seconds.<br>○ The Referee System will automatically deduct the offending robot’s HP by 15% of its Maximum HP, while the remaining alive robots will have their HP deducted by 5% of their Maximum HP. If the robot receives a Yellow Card again within 30 seconds after it receives a Yellow Card, the percentage of their current Maximum HP lost will be doubled that of the previous loss for that robot, and 5% for the other alive robots on the team.<br>○ In each Battle, a robot that has been issued three Yellow Cards in total will receive a Red Card.<br>● Both teams receive a Yellow Card:<br>○ The operating interfaces of all pilots are blocked for 2 seconds and all robots lose 5% of their maximum HP, without taking into account the cumulative number of Yellow Cards received by one robot.<br><table><tr><td>⚡</td><td>● If a robot receives successive Yellow Cards, the time that the pilot’s interface is blocked will add up accordingly. The 30-second period will be reset.<br>● If a robot’s remaining HP is less than or equal to that which needs to be deducted from the penalty, this robot’s HP reduces to 1.<br>● Penalty durations resulting from rule violations (ex: chassis power-off, UI blackout) operate independently of issued yellow cards and do not stack.</td></tr></table></td></tr>
<tr><td>Red Card (Ejection)</td><td>● Ejecting a robot<br>○ If a robot is ejected before entering the 15-Second Referee System Initialization Period, the offending robot will not be allowed to enter and must be removed from the Battlefield. It cannot be replaced by other robots in any round of the current match.<br>○ If a robot is ejected during the 15-Second Referee System Initialization Period, the Red Card should be issued after the Battle</td></tr>
</table>

| | |
|---|---|
| | starts.<br>○ If a robot is ejected during the competition, the robot's HP will become 0 and the transmitted images will become monochrome.<br>● Ejection of Pit Crew Members:<br>○ Pit Crew Members ejected by a referee must leave the Competition Area immediately and cannot be replaced by other Pit Crew Members for all rounds in the current match. All robots controlled by an ejected Pilot must also be ejected for the current Battle, and will not be allowed to join the Battlefield nor can they be replaced by other robots for all rounds in the current match. |
| Involuntary Forfeiture | ● If a Forfeiture is issued for a round (hereinafter referred to as "Round Forfeiture"), the following rules shall apply.<br>**3v3**<br>● If a Forfeiture is issued before the Five-Minute Battle (including during the Setup Period and Referee System Initialization Period), the forfeiting team's Victory Points will be zero, its robots (except the rule-violating one) will be at full HP, and the opponent team's Victory Points and robots' HP will be full.<br>● If a Forfeiture is issued during the Five-Minute Battle, the Battle will end immediately. The forfeiting team's Victory Points will be zero, and the team's robots (except the rule-violating one) will maintain their HP levels at the end of the Battle. The opposing team's Victory Points and robots' HP will remain at the levels when the Battle ends.<br>● If a Forfeiture is issued after a Five-Minute Battle, the forfeiting team's Victory Points will be zero, and the team's robots (except the rule-violating one) will maintain their HP levels at the end of the Battle. The opposing team's Victory Points and robots' HP will remain at the levels when the Battle ends<br>**1v1**<br>● If a Forfeiture is issued before the two-minute Battle (including the setup period and Referee System Initialization Period), the HP of the offending team's robot will become zero, and the HP of the other team's robots will be full.<br>● When a Forfeiture is issued during the two-minute match, this Battle of the match ends immediately. The HP of both teams' robots will be recorded as it is when the Battle ends.<br>● When a Forfeiture is issued after the two-minute match, the HP of both teams' robots will be recorded as it is when the Battle ends.<br>● If a Forfeiture is issued in a match (hereinafter referred to as "Match Forfeiture"), it applies to all rounds in the match, and the HP for each Battle should be calculated according to the above descriptions. |
| Exclusion from Awards | ● Participants are excluded from awards.<br>● Robots are excluded from awards.<br>● Participating teams are excluded from awards. |
| Disqualification | ● The team member is disqualified from the current competition season<br>● The team is disqualified from the current season, but its results in the season will be maintained as a basis for other teams' advancement. |

# 8.2 Penalty Rules

This section explains the penalty rules. The R# rules clearly indicate the rules that Participating Teams, Participants, and robots must follow.

## 8.2.1 Participants

### 8.2.1.1 General Rules

R1 Participating teams are required to meet the requirements listed in ARCC Participant Manual.
**Penalty**: The highest penalty that can be imposed on the offending team is disqualification

R2 Participants and their actions must not interfere with the normal operation of the official equipment, competition processes, and the normal work of Competition Staff.
**Penalty**: The highest penalty that can be imposed on the offending team is disqualification.

R3 Teams must not set up their own wireless equipment or communicate with team members using walkie-talkies in the relevant competition areas, including but not limited to the Preparation Area, Inspection Area, Staging Areas, and Competition Area.
**Penalty**: The highest penalty that can be imposed on the offending team is disqualification.

R4 Teams must not damage any official equipment, including but not limited to equipment in the Competition Area, Staging Areas, Preparation Area and Inspection Area.
**Penalty**: The highest penalty that can be imposed on the offending team is disqualification and compensation as per the price.

R5 Apart from Pit Crew Members who have entered the Staging Areas and Competition Area due to match-related reasons, no participants are allowed inside either area without special reasons.
**Penalty**: The highest penalty that can be imposed on the offending team is disqualification

R6 Any Pit Crew Member who has entered the Staging Area and Competition Area for competition may not leave either area or be replaced by another Pit Crew Member without the permission of the referee.
**Penalty**: Offenders are not allowed to enter the Staging Area and Competition Area. The highest penalty that can be imposed on the offending team is disqualification.

R7 When waiting in the L3 Staging Area, L2 Staging Area, or the L1 Waiting Area, team members are not allowed to bring robots out of the Staging Area without permission.
**L3 Penalty**: Verbal Warning. If the warning is ineffective, the Inspection result will be voided and the robot must repeat Pre-Match Inspection.
**L2 Penalty**: Verbal Warning. If the warning is ineffective, the offenders and robots will be issued a Red Card, with the highest penalty being disqualification.
**L1 Penalty**: Verbal Warning. Robots will be issued a Red Card, with the highest penalty being disqualification.

R8 Participating teams are not allowed to bring their own projectiles into the Inspection Area, Staging Area, or Competition Area.
**Penalty**: Confiscation of projectiles and Verbal Warning. If the Verbal Warning is ineffective, the highest penalty that can be imposed on the offender is disqualification.

R9 After a match is over, Pit Crew Members must power off all their robots, remove them from the competition area and empty all projectiles inside the robots at the Projectile Unloading Area.
**Penalty**: The offending robot will be detained in the Projectile Unloading Area, until its projectiles are cleared.

R10 After a match ends, Pit Crew must return all projectiles used in the competition to the Projectile Unloading Area.
**Penalty**: Confiscation of projectiles and disqualification of the offender from subsequent matches held at the same competition site. The highest penalty that can be imposed on the offender is disqualification.

R11 Except for emergency situations, teams must be present at the Inspection Area before the start of each match for Pre-match Inspection. The team must stand by at the L2 Staging Area 10 minutes before each match.
**Penalty**: The highest penalty is a Match Forfeiture.

R12 Without the permission of the referee, a team may not power on and commission or repair a robot in areas outside the Battlefield from the time the robot passes an Inspection to the end of a match.
**Penalty**: The highest penalty is a Match Forfeiture

R13 The identities and number of personnel of each team entering designated areas such as the Preparation, Inspection, Staging, and Competition Areas must meet the relevant requirements.
**Penalty**: The highest penalty that can be imposed on the offending team is disqualification.

R14 One member of a Pit Crew must wear the Captain Badge, which must not be covered. All Pit crew Members must wear the Pit Crew Badge, which must not be covered. All Robot Pilots must wear the Pilot Badge, which must not be covered.
**Penalty**: The highest penalty that can be imposed on the offender is disqualification

R15 Without the permission of the referee, Pit Crew Members entering the Battlefield must not communicate with anyone from the outside.
**Penalty**: Verbal Warning. If the Verbal Warning is ineffective, the highest penalty that can be imposed on the offender is disqualification.

R16 Pit Crew Members are not allowed to power their equipment using the power supply for official equipment in the Competition Area. However, they may bring their own power supply.
**Penalty**: Verbal Warning. If Verbal Warning is ineffective, the offenders will be issued a Red Card. The highest penalty that can be imposed on the offending team is disqualification.

R17 Pit Crew Members must wear appropriate Personal Protective Equipment (PPE) into the Competition Area.
**Penalty**: The maximum penalty that can be imposed on the offender is a Red Card.

R18 The team that makes an appeal must provide valid evidence or the specifications or rules in the official documents they are citing.
**Penalty**: The highest penalty that can be imposed on the offender is disqualification.

R19 The Team Captain is responsible for management of their team throughout the competition, ensuring that:

- All competition robots pass inspection and comply with open-source robot usage guidelines.
- All team personnel, including but not limited to Advisors, Friends and Family, Alumni, and all other support staff do not commit any rule violations.
- Any other violations are stopped promptly.

**Penalty:** The Captain's managerial responsibility is determined according to the nature and severity of any violations. The offender may be disqualified as the highest penalty, but may also be subject to all applicable local Laws and Regulations.

### 8.2.1.2 Battlefield Specifications

R20 During an Official Timeout, Pit Crew Members are not allowed to fix faults other than those in modules related to the Referee System.
**Penalty**: Verbal Warning. If the Verbal Warning is ineffective, the offender will be issued a Red Card.

R21 After the end of the Setup Period, Pit Crew Members must return to the designated area outside the Battlefield. During the competition, Pit Crew Members are not allowed to leave the area without the permission of the referee.
**Penalty**: Verbal Warning. If the Verbal Warning is ineffective, the offender will be issued a Red Card.

R22 At all times before, during, and after the Match, No team members shall approach the Head Referee Desk unless they are wearing the Team Captain Badge and confirming the result of the match or filing an Appeal
**Penalty:** Verbal Warning. If the Verbal Warning is ineffective, the offender will be issued a Red Card.

R23 After the end of the Setup Period, Pit Crew Members must place the Commissioning Remote Controller for the Sentry Robot at the entrance of the Battlefield. The Remote Controller cannot be used to commission the Sentry once the Five-Second Countdown has started.
**Penalty**: If the violation is committed before the five-minute Battle, a Verbal Warning will be issued. If the Verbal Warning is ineffective, the offending robot will be issued a red card; if it is during the five-minute Battle, the offending robot will be issued a red card.

R24 After the Five-Second Countdown, the Pit Crew must not operate remote controllers located outside the Pilot Room that correspond to deployed robots.
**Penalty**: The offending robot will be issued a Red Card, with the highest penalty being a Round Forfeiture.

R25 Pit crew Members must ensure their robots are operating safely and will not cause harm to any person or equipment in the Competition Area.
**Penalty**: The offending team must bear the relevant responsibility.

#### 8.2.1.3 Pilot Room Requirements

R26 Except for the Pilots of the robots on the Battlefield, the rest of the Pit Crew Members are not allowed in the Pilot Room. Pit Crew Members are not allowed to open the curtain to look inside of the Pilot Room
**Penalty**: Verbal Warning. If the Verbal Warning is ineffective, the offender will be issued a Red Card.

R27 Pilots must operate the relevant robot control equipment in the relevant Pilot Room during the 15-Second Referee System Initialization Period and the Five-Minute Battle, and must remain in their location after the Setup Period, unless otherwise permitted by the referee.
**Penalty**: Verbal Warning. If the Verbal Warning is ineffective, the offender will be issued a Red Card.

R28 During the competition, each pilot is equipped with at most one remote controller and one custom controller.
**Penalty**: Verbal Warning. If the Verbal Warning is ineffective, the offending pilot will be issued a Red Card

R29 Pilots are not allowed to use their own headphones or computers in the Pilot Room.
**Penalty**: Verbal Warning. If the Verbal Warning is ineffective, the team will be issued a Round Forfeiture.

R30 USB keyboards and mice must be manufactured by authorized vendors and be compliant with USB HID protocol specifications.
**Penalty:** Verbal Warning. If the Verbal Warning is ineffective, the offending pilot will be issued a Red Card

### 8.2.2 Robots

R31 Robots and Custom Controllers to be deployed in a match must pass a Pre-Match Inspection.
**Penalty**: Round Forfeiture.

R32 In the first round of a match, the robots must meet the minimum battle team lineup.
**Penalty**: Match Forfeiture

R33 Robots must meet the requirements in the ARCC 2026 Robot Building Specifications.
**Penalty**: The highest penalty that can be imposed on the offending team is disqualification.

| | |
|---|---|
| ⚡ | • Staff will conduct random checks on robots.<br>• Any report made against a robot for not complying with the robot building specifications manual must be supported by the relevant evidence. |

| | |
|---|---|
| | • During the Match, improper installation of speed measurement modules or armor modules may result in the module being deemed offline. |

R34 Before the 15-Second Referee System Initialization Period, armor stickers that meet the requirements in the specifications documents must be attached to robots equipped with Armor Modules.
**Penalty**: Verbal Warning. If the Verbal Warning is ineffective, the offending robot will be issued a Red Card.

R35 Robots must be free of safety issues including but not limited to short circuits, crashing, creating fumes or lighting flames, falling to the ground, and gas cylinder explosions. If a safety issue is identified or presents itself, team members must execute the relevant operations in accordance with the referee's instructions.
**Penalty**: If it happens before the start of a match, the Pit Crew need to resolve the safety issue as required by the referee, otherwise the offending robot will not be allowed to appear on the Battlefield. If it is during the competition, a Verbal Warning will be issued. If the Verbal Warning is ineffective, the offender or the offending robot will be issued a Red Card. Any incident involving serious safety hazards must be handled by the Head Referee in accordance with "9. Irregularities".

R36 Robots are not allowed to launch projectiles continuously off the Battlefield.
Penalty:The highest penalty imposed on the offending robot is a Red Card.

R37 During the Setup Period and the 15-Second Referee System Initialization Period, robots in the Battlefield are not allowed to leave their corresponding Initial Zones.
**Penalty**: The highest penalty imposed on the offending robot is a Red Card.

R38 If any projectile needs to be launched during the Setup Period, it must be launched into a projectile clearance bag or net.
**Penalty**: The highest penalty imposed on the offender and the offending robot is a Red Card.

R39 A Robot which is not powered on within the final 30s of the setup period must be removed from the Battlefield.
**Penalty:** Verbal Warning. If the Verbal Warning is ineffective, the offending robot will be issued a Red Card upon beginning of the Battle.

R40 During the competition, the robot is not allowed to disintegrate into sub-robots or sub-systems connected by multiple flexible cables, and must not cast or launch their own parts.
**Penalty**: The offending robot will be issued a Red Card.

R41 During the competition, alive robots are not allowed to block any of its Armor Modules with its body or transform beyond its maximum expansion size.
**Penalty**: Yellow Card. Verbal Warnings are issued against the offending team based on their subjective intention. If the Verbal Warning is ineffective, a Red Card will be issued.

R42 During the Setup Period, the replacement modules and parts used on robots must meet the requirements for "equivalent parts" as stated in "8.3 Setup Period".
**Penalty**: The highest penalty imposed on the offending robot is a Red Card.

R43 For the duration of the 5-second countdown, robots may not exceed their Maximum Initial Size.

**Penalty**: The offending robot will be issued a Red Card.

## 8.2.3 Interactions

### 8.2.3.1 Interactions between Robots

R44 A robot may not use any of its body structures to strike an opponent robot in collision. If a defeated robot is blocking a key path, the robot can be slowly pushed away.

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| ⚡ | In any collision between robots, the offending robot will be deemed by the referee as the initiator. |

**Penalty**: Warnings are issued against the offending robot based on the pilot's subjective intention and the degree of collision.

**Table 8-3: Penalties for Collision Violations**

| Violation Level | Description |
|---|---|
| Yellow Card | • Actively causing frontal and high-speed collision<br>• Active pushing that causes the other team's robot to move noticeably<br>• Active pushing that impedes the normal movement of the other team's robot |
| Red Card | • Actively causing high-speed, repeated, and intense frontal collision<br>• Active pushing that causes the other team's robot to move for a longer distance<br>• Active pushing that seriously impedes the normal movement of the other team's robot |

If a collision causes serious damage to the opponent's robot or compromises the fairness of the match, then in the next match of the same competition stage the offending robot (i.e., the specific robot number only) is prohibited from competing, and no other robot is allowed to substitute for it.

R45 A robot must not get stuck together with any other robot due to active interference, blocking, or collision.

**Penalty**: Counting from when an entanglement is determined, warnings should be issued against the offending robot based on the length of the violation. If it exceeds 10 seconds, a first Yellow Card will be issued. Thereafter, each 20 seconds will incur a further Yellow Card. This should carry on until the offending robot is ejected. Regardless of whether the offending robot is alive, if the violation lasts longer than 90 seconds, the highest penalty that can be imposed on the offending team is a Round Forfeiture, based on their subjective intention.

R46 A robot must not interrupt any opponent robot's HP recovery by any means of contact.

**Penalty**: The offending robot will be issued a Yellow Card.

### 8.2.3.2 Interactions between Robots and Battlefield Components

To ensure the fairness of the competition and that robots in the Battlefield are able to receive buffs and purchase projectiles effectively, Resupply Penalty Zones have been set up in the Battlefield where the robots of one or both teams are forbidden from entering. The Resupply Zone of one team is the Resupply Penalty Zone for the other.

R47 Robots are not allowed to enter the Enemy team's Resupply Zone.
**Penalty**: Warnings will be issued against the offending team based on how long the robot remained in the Penalty Zone and the impact of its violation. If the violation exceeds 3 seconds, the first Yellow Card is issued. Thereafter, each 10 seconds will incur a further Yellow Card. This carries on until the robot is defeated or disconnected abnormally. An offending robot that causes serious damage to an opponent robot by remaining in a Penalty Zone will be issued a Red Card

R48 During the competition, robots may only use projectiles supplied by Competition Staff.
**Penalty**: The highest penalty that can be imposed on the offending team is disqualification

R49 During the competition, robots are not allowed to destroy nor affect the normal function of the Battlefield Components.
**Penalty**: The highest penalty is a Match Forfeiture.

## 8.3 Serious Violations

The following actions are considered serious violations of rules. The highest penalty Competition Staff may impose on an offending team for serious violations is disqualification. In the event of any violation of local laws and regulations, Competition Staff will fully cooperate with the relevant authorities to hold the offender legally responsible.

**Table 8-4: Categories of Serious Violations**

| Rules | Type |
|---|---|
| **1** | Malicious destruction of the Battlefield, Battlefield Components, other Official Equipment, or the robots or equipment of other teams. |
| **2** | Falsification, assumption of a false identity, or any other behavior determined as cheating. |
| **3** | Tampering with or damaging the Referee System, or interfering with any detecting function of the Referee System through technical means. |
| **4** | Circumstances that violate the specifications documents and are determined by the Arbitration Committee as a serious violation. |
| **5** | Disobedience over penalties, refusal to cooperate, deliberate delay, disrupting the competition, forfeiting without valid reasons, boycotting, or other behavior that hinders the competition. |
| **6** | No Match Fixing for any reasons which may include providing property to others, illegally soliciting or accepting property from others, or any other act for the purpose of obtaining an unjust competition outcome or improper benefits. |

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|---|---|
| **7** | Uncivilized and immoral conduct involving defamation, verbal abuse, rude gestures, malicious heckling, or malicious throwing of objects. |
| **8** | Publishing, spreading, or disseminating to the media false or irresponsible remarks. |
| **9** | Deliberately attacking or colliding with others in a manner that endangers themselves or others. |
| **10** | Carrying hazardous items or contrabands. |
| **11** | Other behaviors that violate the spirit of the competition and are deemed a serious violation. |

# 9. Irregularities

| | |
|---|---|
| ⚡ | There will be a certain delay in the referee's manual penalties and handling of abnormal situations. If it has a major impact on the result of the competition, the Arbitration Committee will determine the final result according to the actual situation |

If any of the following anomalies occur during the competition, it will be handled according to the corresponding process, to which both teams cannot object. The handling process is as follows:

- When a serious safety hazard or irregularity has occurred, such as: a battery explosion, stadium power outage, explosion of a compressed gas cylinder, or interpersonal conflict, the Head Referee will notify both teams' Captains after discovering and confirming the emergency, and eject all robots through the Referee System. The result of the round will be invalidated. The round will restart after the safety hazard or exception has been eliminated. While handling an irregular situation,the Competition Staff will prioritize safety issues and make every effort to protect robots within feasible means. However, there is no guarantee that robots will remain completely unaffected. Any consequences arising from the handling process shall be borne by the participating teams.
- If non-key Battlefield Components are damaged during a match (e.g., damage to the flooring) and the damage does not affect the fairness of the match, the match will proceed as usual.
- The competition will carry on despite any anomaly with a robot's armor light effects or light indicator effects, or any damage to an Armor Module sticker.
- If key Battlefield Components experience logical or structural faults, for example, where the network connections are disrupted causing a robot to disconnect or a Battlefield Component does not operate normally, the referee will solve the problem manually through the Referee System. If the failure cannot be dealt with manually, the referee will notify the pilots of both sides and eject all robots at the same time. The competition will end immediately, and the result of the competition will be invalid. When problems are solved, there will be a replay.
- If there is structural damage or malfunction of Battlefield Components that potentially affects the outcome of a round that was not previously noticed, the Head Referee may decide to replay that

round within 5 minutes after the match ends. If the issue is not noticed within this period, the results of the round will be deemed valid.

- In the case of a serious violation that would clearly have triggered a penalty of forfeiture where the Head Referee did not confirm and execute it before the end of the round, the Head Referee may issue the offending team a forfeiture within 5 minutes after the round ends.
- During the competition, if any situation has occurred that may affect the fairness of the competition, the Head Referee shall notify the Captains of both teams of the situation and suspend the results confirmation process within five minutes after the end of the match, and shall make a determination within 60 minutes and notify both Captains of the final course of action. The handling outcome is final and cannot be challenged by both teams.

# 10. Appeals

Each team has one opportunity to Appeal in each event of each competition site during the ARCC 2026. Such opportunities cannot be accumulated.

**Table 10-1: Appeal Definitions**

| Key Terms | Description |
|---|---|
| Appealing Team | Team who's Captain submits the intent to Appeal<br>Team from which the Appeal attempt is consumed |
| Defendant Team | The Appealing Team's Opponent in the Match being Appealed |

If an appeal is successful, the Appealing Team retains their opportunity to Appeal in future matches. If it is unsuccessful, the team will have exhausted its one opportunity to Appeal. When a team has exhausted its opportunity to appeal, the Arbitration Committee will no longer accept any Appeals from that team.

Once an Appeal is accepted, the Arbitration Committee will deliberate on the appeal materials and relevant evidence. The Arbitration Committee has the right to final interpretation of the appeal decision. No investigation or deliberation shall begin by any member of Staff until an appeal is officially launched.

The following situations do not constitute a basis for appeal and will be immediately rejected, consuming the opportunity for Appeal:

- Verbal Warnings, Yellow Cards, and Red Cards issued as penalties for violations.
- The types and processes of Timeouts initiated.
- "Regular battle damage" occurred at the Referee System Onboard Modules.
- Human timing error in Engineer Challenge.

No appeals are allowed five minutes after the match has ended, or after the Match Results Confirmation Form has been signed.

## 10.1 Appeal Process

Teams wishing to file an appeal should follow the procedure below:

**Table 10-2: Appeal Process**

| Step | Description |
|---|---|
| 1. Team submits Appeal | At the end-of-match confirmation, only the team captain shall indicate their intent to submit an Appeal. This will be indicated on the Match Confirmation Form. The subject of the appeal may be on any played round of the Match, but must be submitted at the end of all rounds of the Match.<br><br>Any team member who does not wear the Team Captain badge will not be allowed to submit an appeal. If additional team members beyond the Team Captain are present then the appeal will not be accepted.<br><br>Note: If the subject of the Appeal involves robots from one or more teams, the Arbitration Committee may detain all relevant robots for the duration of the investigation. Robots will be released to teams no later than the announcement of the outcome. |
| 2. Team completes Appeal form<br><br>Team collects and submits evidence and supporting material | After the Team Captain indicates intent to Appeal to the Head Referee and signs the Match confirmation Form, AND the Head Referee accepts the appeal, the Team Captain will be given the Appeal Form. The blank Appeal Form can be found in Appendix B.<br><br>The Team Captain may then return to their team (robots may be withheld by referees based on the situation), complete the form and gather evidence. At this time, the Match is concluded and teams will not be permitted to access the Battlefield.<br><br>The Team Captain must return the appeal form to the Head Referee within 30 minutes of the written appeal submission time. If the appeal form is not returned within the allocated time, the appeal is lost. |
| 3. Appeal outcome announced | After the Arbitration Committee makes its decision, both relevant Teams' Captains will be notified to a private meeting with the Arbitration Committee. Two additional members from each relevant team are permitted to attend the meeting.<br><br>The Arbitration Committee will then explain the outcome of the Appeal and the supporting facts and evidence for the decision. The outcome of an Appeal as stated in the meeting will be Final and both teams are expected to graciously accept the decision.<br><br>Following the Appeal outcome meeting, the Arbitration Committee will announce the outcome of the Appeal publicly. |
| 4. Execute Appeal decision | If the match or a round is to be replayed, both teams will be notified during the Appeal outcome meeting when the replay is scheduled. In the event that the original appealing team files a new Appeal against a |

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| | round of the replay , they are ineligible to receive their Appeal opportunity regardless of the outcome, since the combination of both appeals would significantly disrupt the tournament schedule.<br><br>Note: It is possible that the replay will be immediately following the meeting, using robots which were previously detained. In this event, robots do not need to re-perform Pre-Match Inspection |

## 10.2 Appeal Materials

Appeal materials include but are not limited to the following:

- Physical:
    - Observation of a physical object: Robots, Battlefield elements
    - A physical object: unofficial projectiles, wireless routers
    - Physical documents: printed pictures, written notes
- Electronic:
    - Digital records of a physical object/event: Digital images, videos
    - Digital records of a communication: emails, chat history, voice recordings
    - Digital information about a physical object: 3D models, electrical schematics,

## 10.3 Appeal Outcomes

Appeal outcomes include but are not limited to:

- Upholding the original Match results
- Loss for the Defendant Team
    - Match results will be invalidated and the Match will be counted as a Forfeiture by the Defendant Team.
- Replay of a full Match or Replay of a Round
    - A single-Round replay will be treated as a BO1 in the schedule.

| | |
|---|---|
| ⚡ | • Successful Appeal: Loss for the Defendant team; Replay of Match or Round.<br>• Unsuccessful Appeal: Upholding the original Match results |

If the Arbitration Committee orders a replay but both parties refuse to participate, the appeal is deemed Unsuccessful and the original results are maintained.

| | |
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| ⚡ | • As best as possible, replayed matches and rounds will be scheduled after all matches on the same day.<br>• All standard rules regarding schedule, Inspection, and competition flow apply to the Rematch unless the Head Referee indicates otherwise. |

If only one Round is replayed, the standings of the match shall be re-determined.

Example: In a BO3 where Red wins Round 1, and Blue wins Round 2 and 3, Red appeals Round 2. The Appeal outcome is to replay Round 2. If Red wins the replay, the final standing is Red 2:0, since Red wins Round 1 and 2, and Round 3 (though previously won by Blue) is not played due to BO3 ending when one team reaches 2 points. If Blue wins the replay, the match statistics will be updated, but the final standing remains Red 1:2.

# Appendix A: References

This chapter contains ARCC-related references.

**Table A-1: Overview of References**

| Category | Download Links and Documents List |
|---|---|
| **Specifications** | • Events<br>• Participant Manual<br>• Robot Building Specifications |
| **Referee System Related** | Download at https://www.robomaster.com/en-US/products/components/referee<br>• Referee System User Manual<br>• Referee System Serial Port Protocol Appendix<br>• User Manuals of Referee System Modules<br>• FAQ<br>• Referee System Player's Client Interface Instructions<br>• Referee System Referee's Client Interface Instructions |

# Appendix B: Appeal Form

**THIS SECTION TO BE FILLED OUT BY HEAD REFEREE**

| Description | Appealing Team Information |
|---|---|
| Team Name | |
| School Name | |
| Match No. & Color | |
| Date & Time of Appeal Initiation | |
| Appeal Outcome | |

**ABOVE SECTION TO BE FILLED OUT BY HEAD REFEREE ONLY. DO NOT WRITE ABOVE**

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1. **Summarize the grounds of the appeal, and the justification for why the results of the Match are invalid.**

2. **State the desired outcome of the appeal:**
   Example: Replay Round, Replay Match, Disqualification

3. **List all evidence supporting your appeal.**
   If any evidence is digital (photos, videos), please contact a member of the Arbitration Committee for instructions on how to share them. You may attach additional pages and documents to this form.

# ARC Robotics 2026

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