



ROBOGAMEZ 2009

“RISING OF THE SILENT TOWER: RESIST OR SURRENDER”

RULES & REGULATIONS

SECONDARY SCHOOL CATEGORY

13 – 17 YEARS OLD

LAST UPDATED: 26TH AUGUST 2009

1. Game Objective

Two opposing teams (a Red team and Green team or Yellow team and Blue team) will operate Wireless Remote machines and must fight against each other in three minutes and must be able to knock out another team's robot in order to get higher points. The points will be given when the team able to attack the opponent and extra points will be awarded if the team can immobilize the rival. The team which obtains the highest points will be declared as the winner after the game ends.

2. Teams

2.1 Each team shall comprise of maximum four members consisting of:

2.1.1 Three students and one instructor (lecturer ONLY) and all are from the same school.

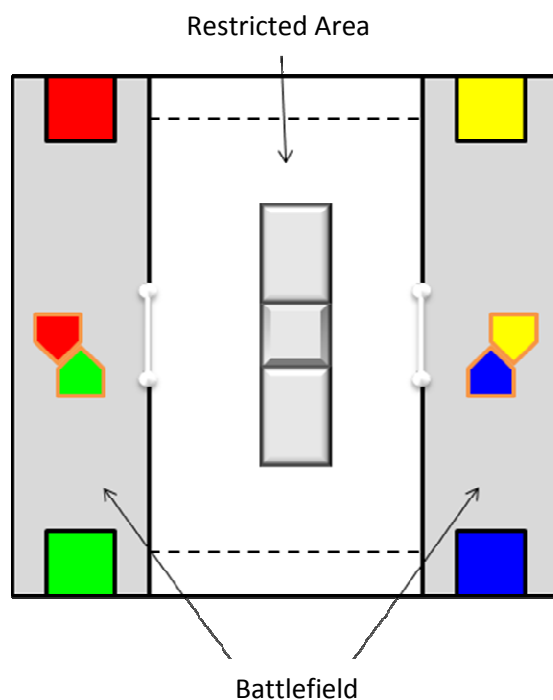
2.2 Only the three participants are permitted to enter the Game Field.

2.3 Team members must be enrolled in their school at the time of the competition.

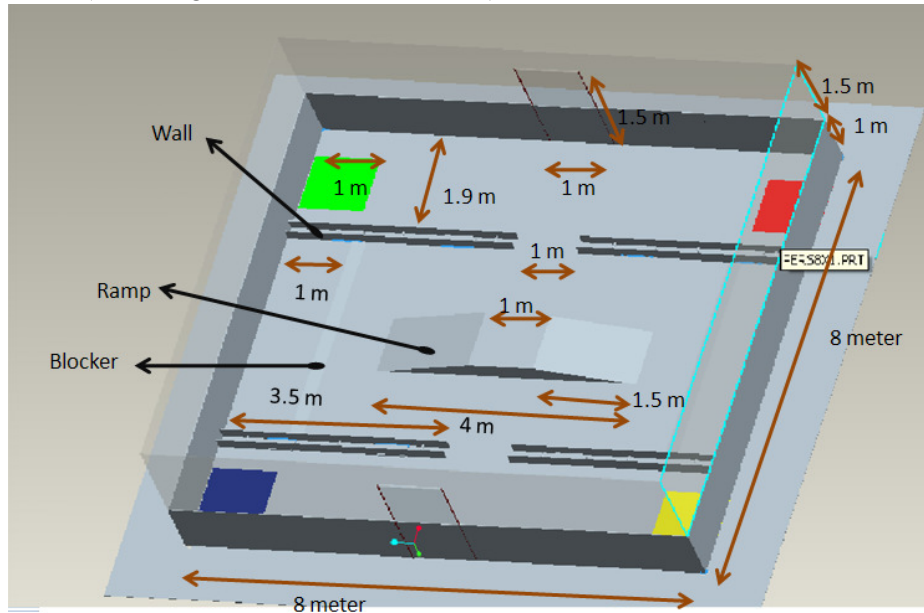
2.4 Secondary school students are **NOT ELIGIBLE** to participate in the Open Category.

3. Game Field

3.1 The game field is using the same open category game field but the area for battle is just the two rectangular side of the game field. That's mean the existing door will be **IGNORED** and the team must fight **WITHIN** the rectangular area only.



The dimension of the game field is 1.9m × 8.0m. There will be a safety area of 1.0m surrounding the game field. (Refer Figure 1 for the dimensions)



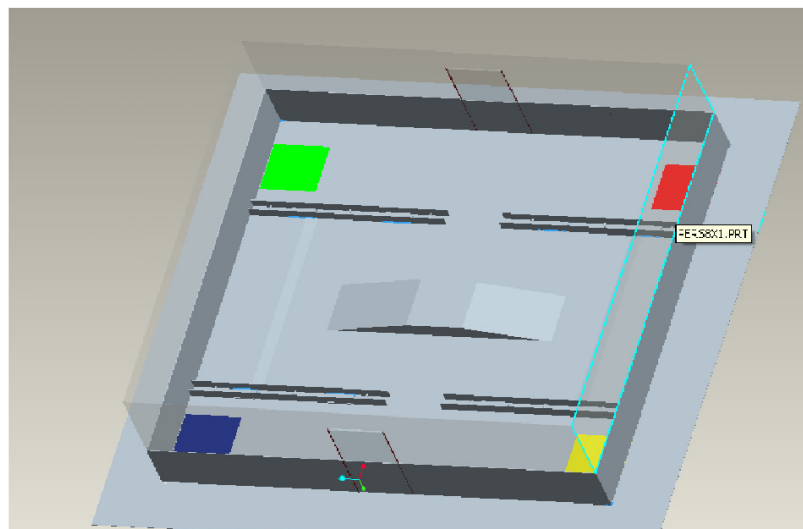
(Figure 1)

3.2 The game field surface is made of steel and surrounded wall made also with 1.0m height of steel plus 1.5m height of acrylic (transparent plastic). The top part of the overall game field also will be covered with the same acrylic.

3.3 The acrylic is purposely added so that the participant's safety is secured.

3.4 There will be a door on the wall for the participants to go inside and do setup as well as our maintenances group.

3.5. Refer the Figure 2 for the game field picture. For further detail please refer to our contact below.
(Refer Rule 18)



(Figure 2)

4. Game Play

- 4.1 Each match consists of one round and shall last for three minutes.
- 4.2 Each match will be started with one minute setup time. You may plan your strategy during this interval time. At this time the operator stayed and be prepared at the safety area where the operator can move around there while controlling the robots.
- 4.3 In the match, each opponent will start at the game field edge accordingly to the team color. There are blue, red, green and yellow color areas where the start zones are. Then when the match started by the referee, the participant's robots will attack each other in order to get point.
- 4.4 Each robot may attack the opponent from any direction and how to get the points will be explain later in Rule 5.
- 4.5 The team which scores the highest points at the end of three minutes will be declared as the winner.
- 4.6 There will be also deduction of points if the team does any violation. (Refer Rule 14)
- 4.7 Otherwise, in case of tie, the winner will be decided as per the following order of priority:
 - 4.7.1 The robot with more aggressive movements (can do numerous attack at short time)
 - 4.7.2 The robot which successfully disable opponent's robot.
 - 4.7.3 The robot with less violation during the match.
- 4.8 If there is a tie after that also, the referee should decide the winner.

5. Scoring

- 5.1 Points will be awarded as per following:
 - 5.1.1 Successfully ramming the opponent with the mechanism or front part (move forwards) of the robots. Attacking with back part (reverse) will not counted as points. **(5 points each)**
 - 5.1.2 Successfully hit the opponent with the built in mechanism is also consider as attacking. **(5 points each)**
 - 5.1.3 Successfully disable opposing team's machine or robot. **(50 points each)**

6. Setting up The Robot

- 6.1 Only two (2) team members are allowed to setup the robot. The other team member (operator) need to standby at the safety area.
- 6.2 Each team has 60 seconds to power up its machine from the time the referee announces "Power up".
- 6.3 The machine could then be "powered up or booted up" and be in a "sleep mode".
- 6.4 Any function of a robot, including drive and weapons, must have the capability of being remotely armed and disarmed.

- 6.5 While disarmed, the robot is not allowed to function in an autonomous fashion.
- 6.6 Any team that fails to complete setting of robots in one minute is NOT allowed to resume the setting work and need to leave the game field immediately.
- 6.7 After the setup time of 60 seconds is over, the referee or announcer will count down from 5 and the game will start at the end of countdown.
- 6.8 Once the match starts, team members are not permitted to touch the machine or go into the game field.

7. Machine

- 7.1 The machine **MUST** be operated through wireless remote.
- 7.2 Operators are not permitted to ride on their machine.
- 7.3 The specifications of the robot, before the game begins, during the game, and after the game, the size of the machine **CANNOT MORE THAN** 500 mm L x 500 mm W x 1000 mm H. This include all mechanism be expanded or activated must be fit in this dimension.
- 7.4 All machines including their power sources, cables, remote controller and other parts of each machine shall be weighed prior to the competition. The total allowable weight of the machine and above accessories for each team to be used throughout the contest **MUST NOT EXCEED 10kg**. The total weight of 10kg doesn't include spare batteries with the same shape, same weight and voltage.
- 7.5 Machine is not permitted to split into two or more units at the start of the game as well as during the game.
- 7.6 Only one member of each team is allowed to control the machine in the game field.
- 7.7 Team members are not allowed to touch the machine once the game has begun.

8. Mobility

- 8.1 All robots must have (easily visible mobility) in order to compete. Methods of mobility include:
 - 8.1.1 Rolling (wheels or the whole robot)
 - 8.1.2 Walking (linear actuated legs)
 - 8.1.3 Shuffling (rotational cam operated legs)
- 8.2 Robots are not permitted to use exposed rotating aerofoil, rocket or jet propulsion methods.

9. Radio Control Requirements

- 9.1 Radio systems used at events **MUST** comply with restrictions put in place by local regulatory bodies and applicable laws.
- 9.2 For secondary school, it is **RECOMMENDED** to use PS2 Wireless remote control other than use other radio control (For more info please contact us) .

10. Weapons

- 10.1 For 13-17 years old or the secondary school category, the following weapons or non-active mechanisms allowable are **ONLY** as state below:
 - 10.1.1 Pushing mechanism
 - 10.1.2 Scooping mechanism.
 - 10.1.3 Ramming mechanism
- 10.2 Robots are allow to use the above mechanisms. Any mechanism that have similarity to that will be accepted.
- 10.3 Passive weapon such as sharp edges attached to the robot is allowed.
- 10.4 Robots are **NOT ALLOWED** to use any machinery tools or dangerous tools like grinder, circular saw and industrial use as pneumatic, hydraulic, rotational weapon, fly wheel etc.
- 10.5 If you are not sure about the weapon, please refer rule number 18.

11. Forbidden Weapons and Materials

The following weapons and materials are **FORBIDDEN** from use: Note: Some of the listed items may be allowed for effects but not as weapons. If you have an application of these items which you feel should be allowed, consult the event organizer ahead of time.

- 11.1 Weapons designed to cause invisible damage to the other robot:
 - 11.1.1 Electricity as a weapon such as Tesla coils, Van-der-Graaf generators, stun guns, or cattle prods
 - 11.1.2 EMF fields from permanent or electromagnets, which affect another robots electronics.
- 11.2 Weapons or defenses, which tend to stop combat completely, of both (or more) robots. This includes, but is not limited to the following:
 - 11.2.1 Entanglement devices. Such as nets, fishing line, cables, string, glues or tapes, which require the match to be stopped and the robots separated. (If this occurs the ‘entangler’ forfeits the match)
- 11.3 The speed of any rotating weapons - e.g. circular saws, carbon or steel cutting discs

- 11.4 Rotating hardened steel blades that may shatter are not allowed.
- 11.5 Pneumatic and Hydraulic system also not allowed.
- 11.6 Commercial blades - e.g. bayonets
- 11.7 Untethered Projectiles. Projectiles must have a tether capable of stopping the projectile at full speed and be no longer than 2.5m (approx 8 feet).
- 11.8 Heat and fire are forbidden as weapons. This includes, but is not limited to the following:
 - 11.8.1 Heat specifically generated to damage an opponent
 - 11.8.2 Flammable liquids or gases
 - 11.8.3 Explosives or flammable solids such as:
 - 11.8.3.1 DOT Class C devices
 - 11.8.3.2 Gunpowder/ Cartridge Primers
 - 11.8.3.3 Military Explosives, etc.
 - 11.8.4 Light and smoke based weapons, which impair the viewing of robots by an Entrant, Judge, Official or Viewer. (You are allowed to physically engulf your opponent with your robot however.) This includes, but is not limited to the following:
 - 11.8.4.1 Large quantities of smoke or dust. Limited smoke effects may be allowed by some events.
 - 11.8.4.2 Lights such as external lasers above Class 2 (1mw) output and bright strobe lights, which may blind the opponent.
 - 11.8.5 Hazardous or dangerous materials are forbidden from use anywhere on a robot where they may contact humans, or by way of the robot being damaged (within reason) contact humans. Note: If you have a question please contact your event organizer.

12.Power Supply for Machine

- 12.1 The only permitted batteries are ones that cannot spill or spray any of their contents when damaged or inverted. This means that standard car and motorcycle wet cell batteries are prohibited. Examples of batteries that are permitted: gel cells and impregnated glass mat, e.g. Yuassa, Hawkers, NiCads, NiMh, dry cells, AGM, LIon, etc. If your design uses a new type of battery, or one you are not sure about please contact the event organizers.
 - 12.1.1 Lithium rechargeable batteries will be permitted subject to the following restrictions.
 - 12.1.1.1 The event organizer must be informed prior to the event and approve their use.
 - 12.1.1.2 Only chargers specifically designed for use with Lithium rechargeable batteries may be used.

- 12.1.2 The robot must be fitted with both an under voltage cut-out set at or higher than the battery manufacturers recommendation that will prevent the batteries from becoming damaged due to over discharge.
- 12.1.3 Batteries must be removed from the robot, inspected and placed into a sealable steel or other suitable heat proof container prior to, and during the charging process. (It is the responsibility of the roboteer to provide this container, which shall be inspected as part of the normal 'tech check'.)
- 12.1.4 Batteries must not be left unattended at any time during the charging process. Leaving batteries unattended while charging will be considered a serious breach of pit safety and may result in you and your robot being removed from the event.
- 12.1.5 Batteries showing any evidence of damage or 'swelling' must immediately be placed in the heat proof container, covered in salt, the container sealed and removed to a safe area outdoors.
- 12.1.6 A suitable quantity of salt, sufficient to completely cover the batteries in the event of damage or fire must be available. If not provided by the event organizer, it will be the responsibility of the roboteer to provide this.
- 12.2 Mean working voltage should not exceed **12V DC** or **12V RMS AC**. It is understood that a charged battery's initial voltage state is above their nominal rated value.
- 12.3 All machines must incorporate a way of removing all power to weapons and drive systems (systems that could cause potential human bodily injury) that can be activated easily without endangering the person turning it off.
 - 12.3.1 The main power cut-off **MUST** be a removable link, which must **NOT** be in place unless the robot is in the arena or under the supervision of a technician. A key or switch is not allowed. If there is more than one link they must be positioned adjacent to each other.
 - 12.3.2 The link must be positioned in a visible part of the robot's bodywork, fitted away from any operating weaponry or drive, and this position must be clearly marked.
 - 12.3.3 The link may be fitted under a cover, but the cover must be able to be opened without the use of tools.
 - 12.3.4 Machine can be fitted with on-off switches that operate both radio receiver and drive/weapon circuits - in practice totally removing all power from the robot. (optional)
 - 12.3.5 All efforts should be made to protect battery terminals from a direct short and causing a battery fire.
 - 12.3.6 Cabling must be of sufficient grade and suitably insulated for maximum operational current.

13. “Retry” of the machines

13.1 No retry is allowed once the game is started. (For safety precautions)

14. Violations and Deductions of Points

The following actions will be regarded as violations and five (5) points will be deducted for each occurrence.

14.1 A violation occurs when team member(s) exceeded the 60 seconds setting up time.

14.2 A violation occurs when there is a false start (machines being started before the referee signals a start.)

14.3 A violation occurs when the robot or machine is not moving after 30 seconds game started.

15. Disqualifications

The following behaviors shall be considered for “disqualification of the team” by the referees for that particular match.

15.1 Attempting to cause damage to the game field and the equipments on the field.

15.2 More than one (1) False Start in a match (machines being started before the referee signals a start.)

15.3 Performing any act against the spirit of fair play and friendship between participating teams.

15.4 The team that does not follow the instruction or warning of the Referee will lead to disqualification from the match.

15.5 Three (3) violations would lead to disqualification from that match.

15.6 Any forbidden weapons and materials stated in Rules 11.

15.7 Any behavior violating the Rule Book.

16. Safety

16.1 All machines must be built such that they will not harm the operators, the referees, and match officials, members of the audience, opponent’s equipment and the game field. Explosives, fires and hazardous chemicals shall not be used.

16.2 To ensure safety, when using a laser beam, it must be less than a Class 2 laser, and used in a way that will not harm any operators, the referees, match officials, audience, opponent’s equipment and the game field.

17.Others

17.1 For any other behavior not specified in the rules, referees are given full authority to make the decision and the decision is final in the event of a dispute.

17.2 Any amendments to these rules will be announced by the Contest Committee and be updated on website www.uniten.edu.my/go/robogamez

17.3 All machines must be designed and made by student teams - readymade commercial machines will be disqualified from being used.

17.4 The allowable margin of error to the game field in this Rulebook wherever not mentioned is \pm 5% in size.

18. Questions regarding theme and rules

E-mail : zulz@uniten.edu.my

H/p : 012 4045254

19.FAQs

Website : www.uniten.edu.my/go/robogamez