Manual Sumo Robot Competition (Senior)

(Rules and Regulations)
1.0 INTRODUCTION

Robot-sumo, or pepe-sumo, is a sport in which two robots attempt to push each other out of a circle (in a similar fashion to the sport of sumo). The robots used in this competition are called sumobots.

2.0 OBJECTIVE

Participants are required to build a self-contained mobile robot that is able to push its opponent out of the specified ring in according to the tournament rules. Robot handlers are to operate their robots through the wireless-controlled console.

3.0 ROBOT SPECIFICATIONS

Robotic Platform
ANY TYPE OF ROBOTIC PLATFORMS can join the competition (e.g. Arduino-based, LEGO, RERO, etc.)

Dimensions and Weight
The size of the robots shall not exceed 30cm (length) x 30cm (width). There is no height restriction and it may take any shape and size once the match begins. The weight shall not exceed 5 kg excluding the wireless-controlled console (e.g. Radio Controller, Smartphone with Bluetooth interface) used by the robot handler.

Restrictions on robot Design
- Do not disturb the opponent’s radio/wireless-control by putting a jamming device in the robot.
- Robots shall not damage the arena deliberately.
- Robots shall not throw liquid or powder or other substances at the opponent.
- Robots shall not employ any flammable devices as a weapon.
- Robots should not secure itself on the ring surface by using, suction cups, diaphragms, sticky treads, glue or other such devices.
- Projectile weapons or saw-blades are prohibited.
Robot Control

❖ Radio-controlled Frequencies

▪ The radio-controlled frequencies shall only be FM 27 MHz or 2.4GHz Digital Spectrum Modulation (DSM). Participants who are using FM 27 MHz must be capable of operating in any of its frequency bands. Participants are allowed up to two changes in frequency bands in a game. If the robot failed to proceed after the second band change, it shall be retired from the game.

❖ Bluetooth-controlled Devices

▪ User may also use Bluetooth as radio-control (RC) for the sumo game, and using smart phone as the controller.

Labelling

All robots must be labelled with their team names on the front of the robot. The minimum font size is Arial 24.

Clearing of Debris

Fallen items from the robots shall be removed after each match.

4.0 ARENA SPECIFICATIONS

Dimensions

The diameter of the ring is 154cm including the boundary marking.

Markings

Two red-brown colour starting lines (20cm x 2cm) locate at 20cm apart at the centre of the ring. They indicate the starting positions for two competing robots. The boundary of the ring arena is marked in white colour. The width is 5cm.
5.0 GAMES RULES

- Each team consist 2 contestants.
- Age for each contestant is between 13 and 18 years old.
- A game consists of 3 matches/round. Each match shall last for 2 minutes.
- One point shall be given to every match winner. Zero point shall be given to a draw or a loser.
- If a game ends with no winner, a test of strength by the two robots immediately after the last match will be the decider.
- A robot wins when any part of the opponent robot touches the floor.
- Participants will be given one minute of Servicing -Time before the start of their game. A maximum of two members are allowed to service their robots at a designated area under supervision. Only replacement of identical parts and batteries are allowed during the Servicing-Time.
- Each team will only be given one time-out of one minute within a game (of 3 matches). The timeout will apply after the match and only for the requesting team. Changing of battery is not allowed during the time-out.
- A participant is allowed to handle only one same robot throughout the event. Each robot should only have one same handler. The handler and robot will be identified during registration and caging.
6.0 CAGING

Robots shall be inspected and caged before the start of the game.

7.0 TEAM MEMBERS

Maximum number of members for each team is TWO participants. The competition is opened to 13-18 YEARS OLD student only. The technical advisor (teacher) is not allowed to touch or repair the robot during the competition and should not be involved in the programming of the robot. In case of the technical advisor interference with the robot or referee decisions during the competition, the team will risk being disqualified.

8.0 DECLARING OBJECTIONS

No objections shall be declared against the judges’ decisions.

9.0 FLEXIBILITY OF RULES

As long as the concept and fundamentals of the rules are observed, these rules shall be flexible enough to encompass the changes in the number of players and of the contents of matches. Modifications or abolition of the rules can be made by the local event organizers as long as they are published prior to the event, and are consistently maintained throughout the event.

NOTE!

- Any changes will be notified.
- Team is advice to bring extra battery.
- We will not provide any battery.
- After inspection, the robot will be placed to the quarantine zone.
- Team cannot touch or request their robot in the quarantine zone.
- Make sure your robot is ready before inspection.
- Enjoy the game 😊