ROBOT SUMO COMPETITION

1. OBJECTIVE
Participants are required to build a self-contained mobile robot that is able to push its opponent out of the specified ring in accordance to the tournament rules. Robot handlers are allowed to operate their robots either through the radio-controlled console or the robot is an autonomous type. All participants shall compete under the same category.

2. ROBOT SPECIFICATIONS

2.1 Dimensions and Weight
The size of the radio-controlled and autonomous robots shall not exceed 20cm (length) x 20cm (width) by any height. The robot can be in any shape but the whole robot has to pass through a 20cm x 20cm hollow container.
The weight shall not exceed 3 kg excluding the radio-controlled console used by the robot handler.

2.2 Don'ts in the Design
2.2.1 Do not disturb the opponent’s radio-control by putting a jamming device in the robot.
2.2.2 Do not use parts that can break or damage the ring surface.
2.2.3 Do not use any devices that can throw liquid or powder or things at the opponent robot.
2.2.4 Do not use any inflamable devices.
2.2.5 Do not secure a robot on the ring surface by using any devices such as suction cups, diaphragms, sticky treads or glue.
2.2.6 Do not use any projectile weapons or saw-plates.
2.2.7 Do not accommodate any devices that cause damage to the opponent robot.

2.3 Radio-controlled Frequencies
The radio-controlled frequencies in use is only 27 MHz with FM (frequency modulation) in narrow bands from 1 to 12. Participants must be capable of operating in any of these bands; otherwise they shall be disqualified. The Futaba, Sanwa and Kagaku are the recommended brands for the radio-controlled console.

2.4 Labelling
All robots must be labeled with of their team names.

3. RING SPECIFICATIONS

3.1 Dimensions and Materials
The ring arena is made of a single ½” MDF board and covered by a 3mm black hard rubber sheet. The diameter of the ring is 154mm including the boundary marking.

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

4.1 **Sumo Game**

A game consists of 3 matches. In the first rounds, every robot has to complete 3 matches. Each match lasts for 2 minutes. One point shall be given to every match winner. Zero point shall be given to a draw or a loser. The tournament shall divide the participating teams into groups of maximum 4 robots.

In the second rounds and above, every robot has to win two matches for qualifying to the next round. Each match lasts 3 minutes. The third match shall be carried out only if there is a draw. The third match shall continue in sudden death until a winner generates if the 3-minute match time is over.

4.2 **Match Winner**

Any robot is able to push its opponent robot until any part of the opponent robot touching the floor.

4.3 **Time Out**

Each team will be given One timeout (if necessary) for each game (for 3 matches). Participating team can not change their battery during the timeout period. The duration of the time out is 1 minute. No timeout shall be allowed during the match.

If the team can not play after the timeout, a point shall be given to the opponent team.

There is 1-minute interval between any matches.

Every team shall change their battery (if necessary) only before the game starts. Two minutes shall be given for this purpose.

4.4 **Service Time**

10 minutes is given for teams to service their robots before each round of competition after the preliminary rounds. A maximum of 2 handlers are allowed to service the robots at designated areas under supervision. Only replacement of identical parts are allowed during the Service Time.

4.4 **Appeal**

No appeal shall be allowed on the judge’s decision in the game.