RF SUMO ROBOT 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 to operate their robots through the radio-controlled console.

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 inflammable 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

2.3.1 The radio-controlled frequencies shall only be FM 27 MHz or 2.4GHz Digital Spectrum Modulation (DSM).

2.3.2 Participants who are using FM 27MHz must be capable of operating in any of its frequency bands. Participants are allowed up to two changes in frequency bands. If the robot failed to proceed after the second band change, it shall be retired from the game.

2.4 Labelling

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

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 154cm 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
The tournament shall divide the participating teams into groups of maximum 4 robots.
A game consists of 3 matches. 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.

4.2 Match Winner
A robot wins when any part of the opponent robot touches the floor.

4.3 Time Out
Each team will only be given one time-out of one minute in a game (of 3 matches). The
time-out will apply after the match and only for the requesting team. Changing of battery
is not allowed during the time-out.

4.4 Service Time
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.