

Cargo Mania 2K20

TASK:

- Teams has to build a manually controlled bot which can do simple task of gripping blocks and putting them in target zones so that it can complete the route by overcoming the Hurdles in its path.
- The bot can be wired or wireless. In case the participants use wireless mechanism, they must use dual frequency remote.
- There will be two rounds: (i) QUALIFIER ROUND
(ii) FINAL ROUND

ARENA:

- 4 Semi-Circular Pipes of dimension 400mm length & 20mm Radius, One Semi-circular Pipes of dimension 400mm length & 15mm Radius.
- Three rectangular hurdles of dimensions 100mm x50mm (lxb).
- Ramp assembly with inclination 20 degrees and declination 30 degrees.
- Half Ramp Assembly with Inclination 15 degrees.
- "Checkpoints" 1, 2, 3 of Dimensions 400mm X 50mm .
- "START" and "FINISH" of dimensions 500mm x100mm .

BOT SPECIFICATIONS:

- The dimensions of the bot should be less than or equal to 300 mm X 300 mm X 300 mm at the start of the game failing which the team will be disqualified from the competition. However the bot can extend its dimension once the run starts. An error of (+15% /-15%) is Permitted.
- The bot must be controlled manually.
- Teams can use both wired as well as wireless control mechanisms. In case of wired bots, the length of wire should be minimum 2 meters so that the wire remains slack at any instant of time. If the

participants use wireless mechanism then it is mandatory to use a dual frequency remote.

- The dimensions of the remote are not included in the size constraint of the bot.
- Bot must have an on-board power supply in any case (i.e. on the robot).
- Participants are not supposed to use any readymade Lego components or readymade gripping mechanism. However the participants are allowed to use readymade gear assemblies. Violating this clause will lead to immediate disqualification of the team.
- Irrespective of the mechanism used, only one person will be allowed to control the bot.
- Failing to meet the above specifications will lead to immediate disqualification.

POWER SUPPLY:

- The participants should use an electric or non-electric power supply. On board power supply is not compulsory. The power source must be non-polluting and must satisfy the safety

Constraints determined by the organizers. In case of non-electric power supply, the participants must

Get it approved from the organizers beforehand via email. Organizers are not responsible for the

Inconvenience if the approval is not sought.

- In case of an electric power supply, the voltage between any two points should be less than or equal

to 24V DC at all times during the run.

- AC power supply may be provided and can be used in the competition.

GAME RULES:

- The bot would be checked for safety before starting and will be disqualified if found unsafe for other

Participants.

- Only one team member is allowed to handle the bot. No other team member is allowed to enter the

arena.

- The bot will be eligible for disqualification if it causes any kind of damage to the arena

- The bot is not allowed to Slide the blocks against the ground except for fine adjustments in the

Deposit Zone.

- Any damage done to the blocks will lead to immediate disqualification.
- Maximum of 8 minutes will be given for each team.
- The arena has 3 checkpoints, In case the bot gets stuck at any place, then the block it is carrying (if any) will be repositioned at its initial position and the bot will be kept in the checkpoints corresponding to that zone. There will no penalty for this.

- The blocks which are correctly deposited in deposit zones/pushed from ramp won't be disturbed.
- The timer won't be stopped during this process.
- In case of any disputes / discrepancies, the organizers' decision will be final and binding.
- The organizers reserve the rights to change any or all of the above rules as they deem fit. Change in rules, if any will be highlighted on the website and notified to the registered teams.

JUDGING:

- 30 points will be awarded for successfully crossing hurdles between START & Checkpoint A.
- 20 points each will be awarded for placing Block 1 and Block 2 in the Deposit Zone 1. Thus a total of 40 points will be awarded for placing both the blocks to complete the path.
- The participants may voluntarily skip the above step and arrive at Checkpoint B but in this case they will not be given the benefit of time thus scoring T=0 for such cases
- 10 points will be awarded for crossing the wedge and reach Checkpoint B, points will be Awarded only once for crossing the wedge. Points will not be awarded if the bot crosses the Wedge multiple times.
- 30 points will be awarded to arrive at Checkpoint C if and only if the bot is carrying Block 3

at that particular instant.

- 20 points will be awarded to keep Block 3 in the Deposit Zone 2.
- 30 points will be awarded to Land safely in the Sand Box while holding the Block 4.
- 20 points each will be awarded to keep Block 4 and Block 5 in the Deposit Zone 3.
- In case bot falls/ crosses the referred path then 10 points will be deducted and bot will be placed at

the previous Checkpoint corresponding to that zone as shown in Fig. 1.

SCORING:

- A = Points scored
- P = Penalties
- T = (480 -Time taken in seconds)
- Total points scored = A + T - P
- The team with maximum points will be the winner.

TEAM SPECIFICATIONS:

- A team can consist of a maximum of 4 members.
- Students from different educational institutes can form a team.

ELIGIBILITY:

- All students with a valid identity card of their respective educational institutes are eligible to Participate.

CERTIFICATE POLICY:

- Top three teams in the finale will be awarded Certificate of Excellence.
 - Certification of participation will be awarded to qualifying participants.

For more detail's :

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