

## RobIt

### TASK:

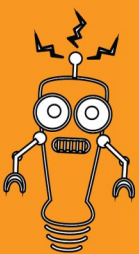
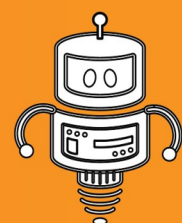
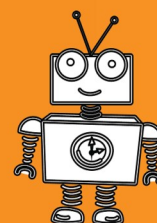
- The team has to build a manually controlled bot which can do the simple task of gripping blocks (referred as flag) and putting them in target zones lying in the opponent's zone. Bot must also be capable of defending or blocking the advancement of enemy bot.
- The bot can be wired or wireless. In case the participants use a wireless mechanism, they must use dual frequency remote.

### GAMEPLAY:

- Both the teams must start from the 'START' line in their respective side.
- And the bot must follow the path as marked in the fig. v.
- But as only one flag is kept in the centre, bots must compete to get the flag.
- Once one team, say A, captures the flag, team B must try and stop team A from planting the flag on side B.
- If team A succeeds in its mission despite of it, Team A wins.
- In case Team B successfully defends its part of arena till time limit exceeds then team B wins.
- Winner is qualified to the next round.
- In the final round, rematches are called till we have a definitive winner, i.e at least one team successfully plants the flag.

### BOT SPECIFICATIONS:

- The dimensions of the bot should be less than or equal to 250 mm X 250mm X 250mm (lxbxh) failing which the team will be disqualified from the competition. The bot can however extend its dimension once the run starts. An error of (-5%) is permitted.
- Participants must note that no bots can exceed the maximum limit of 250mm (l or b or h). No positive error is tolerated.
- 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.
- The Bot must have an onboard power supply in any case.



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- Participants are not supposed to use any ready made Lego components or ready made gripping mechanism. However, the participants are allowed to use ready made gear assemblies.
- Irrespective of the mechanism used, only one person will be allowed to control the bot.
- Maximum permissible weight of the bot is 2.5 kg.
- Failing to meet any of the above specifications will lead to immediate disqualification.

## ARENA:

- The outer dimension of the arena is  $2400 \times 2400 \text{ mm}^2$ .
- The arena has two parts, A and B which are skew-mirrored images of each other and a mid-rib with a block (referred as flag) of the size  $100 \times 100 \times 100 \text{ mm}^3$ .
- The midrib has a sand bed, on which block is placed at the centre; and this sand bed is sandwiched between 2 stone beds on either side.
- Each side contains,
  - 4 solid wedges of different height and base. (Refer the images)
  - 1 rope wedge (fig. ii)
  - 1 sand bed of 20 mm depth,  $280 \times 300 \text{ mm}^2$ .
  - 1 stone bed of  $240 \times 300 \text{ mm}^2$ .
  - 2 elevated wooden strips of 50 mm width which are  $180 \times \text{mm}$  apart from one another.
- Refer fig. v for the path each team has to follow.
- The arena might have  $\pm 5$  tolerance.

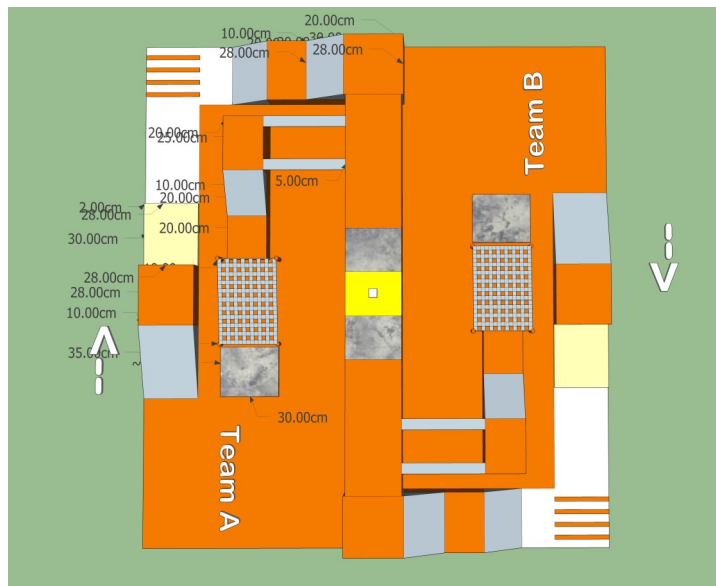
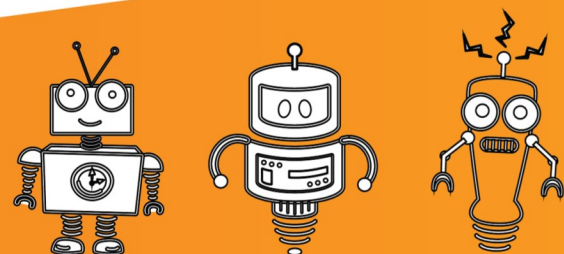


fig. i



A banner with a dark grey and orange geometric design. The text "IMPETUS 19.0" is written in a bold, orange, sans-serif font on the dark grey background.

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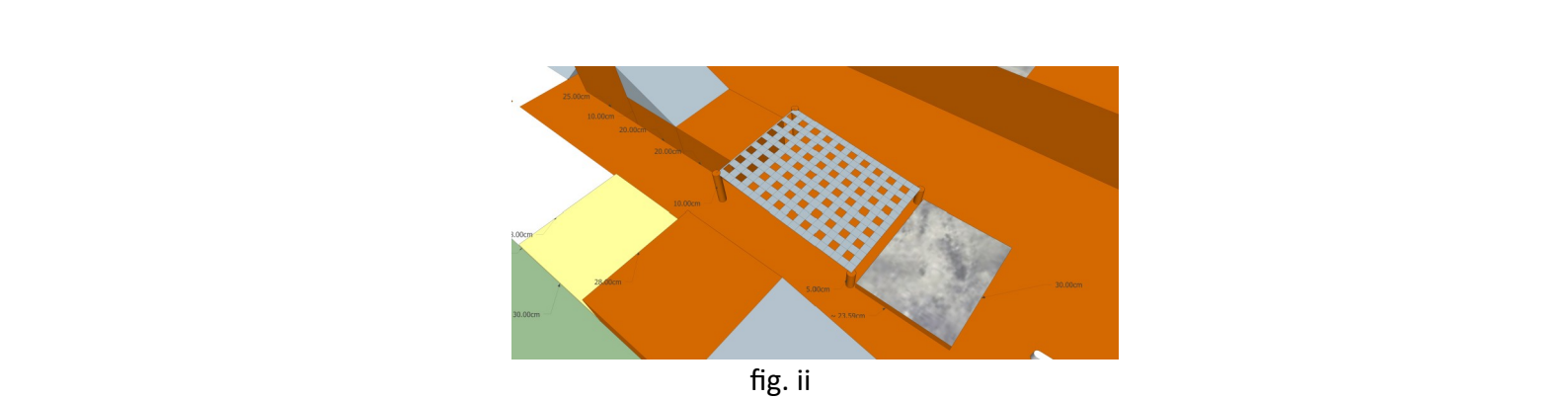


fig. ii

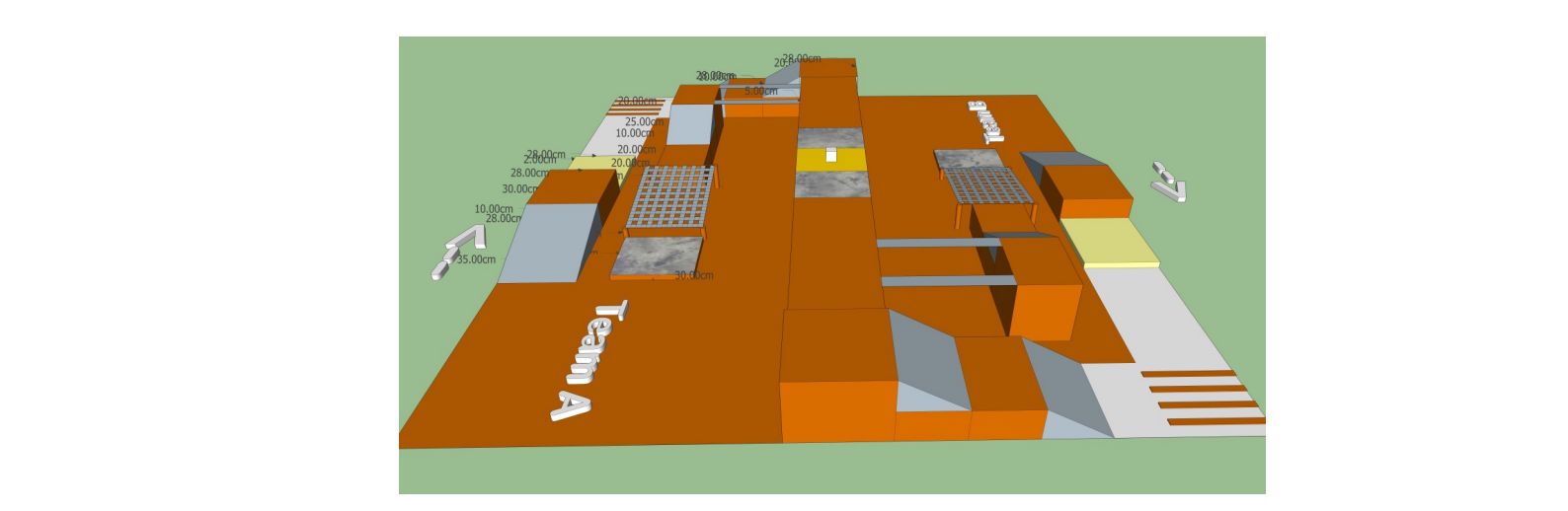


fig. iii

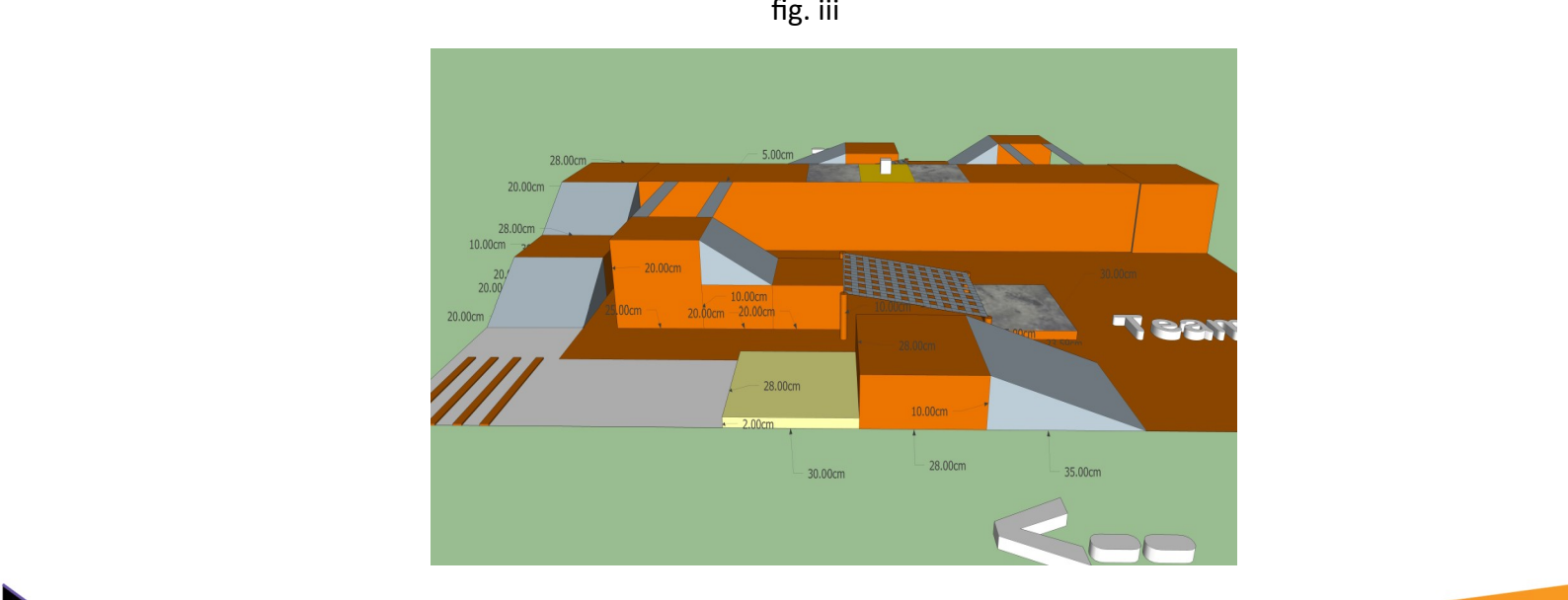
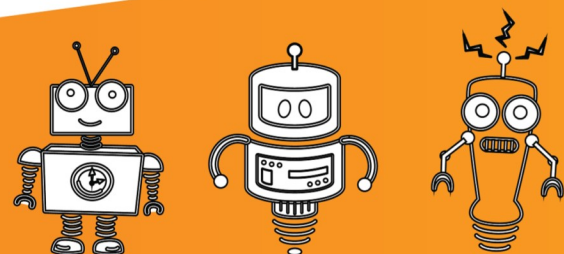
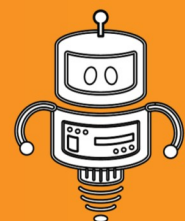


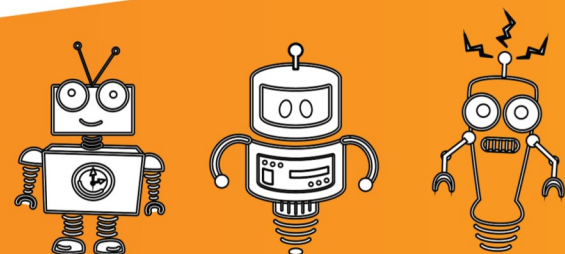
fig. iv



POWER SUPPLY:

- The participants should use an on-board electric or non-electric power supply i.e. the power source should be on the bot itself. The power source must be non-polluting and must satisfy the safety constraints determined by the organizers. In case of the 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 will not be provided and cannot be used in the competition.
- Please get your own cell chargers, Battery cells as it won't be provided by the organizers.

- 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 liable for disqualification if it causes any kind of damage to the arena.
- The bot is not allowed to slide the blocks against the ground.
- Any damage done to the blocks will lead to immediate disqualification.
- Maximum of specified minutes will be given for each match.



# IMPETUS 19.0

- If the block drops anywhere else in the arena, the other team (say B) can try to grab it and continue the game to plant it on its enemy side (here, side A)
- The timer will be running during this process.
- In case of any disputes/discrepancies, the organizer's decision will be final and binding. The organizer's 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.

## TEAM SPECIFICATIONS:

- A team may 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:

- Winner and runner teams are given the prize the same day.
- All participants are mailed with e-certificate of participation shortly after the event.

