Contest Rules

Version: 2.5 , Date: September 2, 2018

Disclaimer

The GeekPwn organizer is providing this document solely to help contest teams and players to get familiar with the rules of Robot Agent Challenge. This document is for reference only and subject to the real condition of contest field. The GeekPwn organizer has the right to adjust the content of this document, and reserve the final explanation right of all the Robot Agent Challenge rules.

The latest version of this document is published on the GeekPwn official site. Please always check the latest version. Should there be any difference between the English version and the Chinese version, the Chinese version would prevail.

Change Logs

Version 2.4: Revised contest form, missions, points etc. based on feedback and real condition of contest field.
Version 2.5: Updated contest field layout, computer pictures and size information.

Contest Prizes

1st place: $15,000-$30,000 USD

2nd place: $8,000-$15,000 USD

3rd place: $3,000-$8,000 USD

Excellent Award: $1,000-$3,000 USD

The final amount of reward bonus is decided by judges based on points ranking, game efficiency, automatic level, creativeness, tech doc submitted etc.

Notes

When describing size or weight in this document, "m" stands for "meter", "cm" stands for "centimeter", "kg" stands for "kilogram".

Contest Goal

In this Robot Agent Challenge contest, each team is required to make a robot which can invade a physical mock-up lab room. During the contest, the robot can be remotely controlled by players, or act autonomously, to complete missions and gain corresponding points. Final ranking is based on the total points gained by each team.

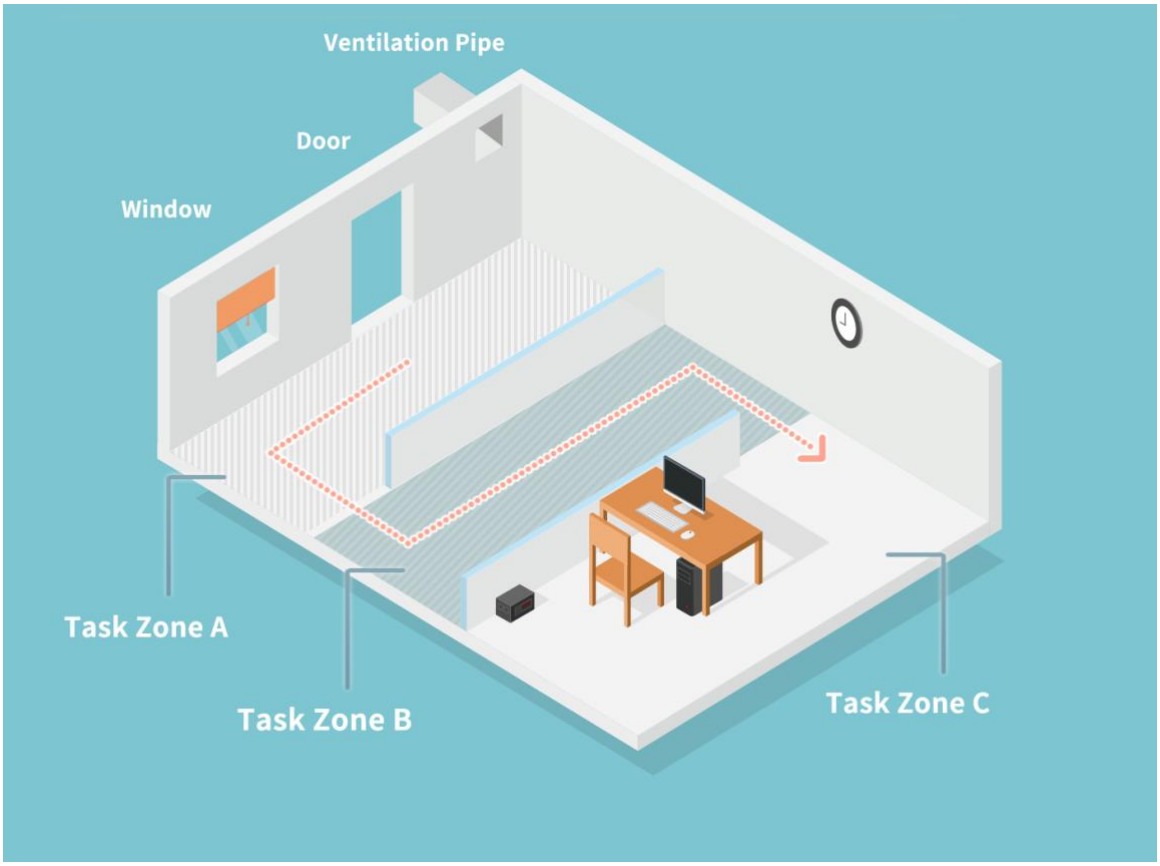
Contest Form

1. Each team will try contest in turn. Each round of contest has max time of 20 minutes. The round of contest is over when time used up to 20 minutes.
2. If contest is interrupted and ended due to robot malfunction, the team can apply for restarting the contest. Each team can restart contest up to 2 times. In such case, the points of last contest will take effect.
3. The player of contest team is not allowed to enter the contest field at the contest time. If robot is remotely controlled by player, the player can only watch environment via the point view of the controlled robot. Before the scheduled contest day, the registered contest team may contact the contest organizer to test robots in similar contest field.
4. Each team can fulfill missions with one single robot, or multiple robots in group. Total weight of all robots in group entering the contest field should be no more than 15kg (including accessory parts like wires used to connect and control robots).
5. Each team can have total team members up to 3.
6. It is forbidden to use destructive manner in contest. If there is any damage of contest facilities caused by player's contest manner, the team will be disqualified.
7. The judges of contest have the final judgement rights on the teams' qualifications and contest results.

Contest Field

The contest field is a physical mock-up lab room with size about 4m(length) * 3m(width) * 2.6m(height). It is divide to 3 mission zones: **Zone A (Entrance)**, **Zone B (Dodging)** and **Zone C (Invasion)**. Robot (or robots in group) should finish Zone A mission before starting Zone B mission, and finish Zone B mission before starting Zone C mission. The movement of robot should follow the defined path. It is forbidden to cross the virtual wall between zones from air.

The contest field layout is like below:



Contest Missions

/ Mission Zone A: Entrance /

1. Each team should choose only one entrance mission. If there are multiple robots in group, all robots in group should take the same mission. Points of completed mission will be counted for only one time.
2. Robot (or robots in group) should depart at specified location and have no physical touch with player after started the entrance mission.
3. Please note passing through the door is not allowed.

Missions	Goals	Conditions	Points
Get out of postal parcel and enter room	Robot should get out of a postal parcel and reach the specified position in the lab room.	Robot should be in the form of completely sealed postal parcel, placed on the ground inside the lab door. The parcel is made by player, with size not exceeding **80cm * 80cm * 80cm**, total weight with robot(s) no more than **20kg**.	**10**
Enter room through window	Robot should enter through the window and reach the specified position in the lab room.	The size of window is about **1m(height) * 0.6m(width)**, height to the ground about **1m**, distance to the player about **1.5m**.	**20**

Enter room through ventilation pipe	Robot should enter through the ventilation pipe and reach the specified position in the lab room.	The ventilation pipe is near ceiling. It’ s square shape with **40cm(height) * 50cm(width) * 1m(length)**, thickness about **0.5cm**, plastic material with smooth surface, vertical entrance and exit without cover.	**30**

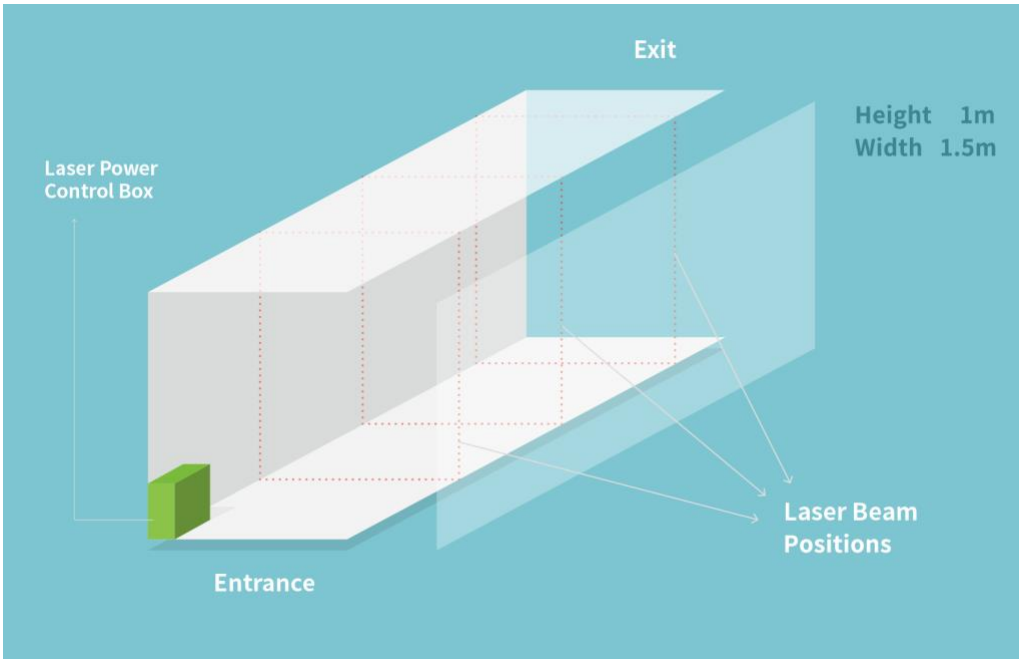
/ Mission Zone B: Dodging /

1. Each team can choose either dodging laser beams or turning off laser beams as the target mission. If there are multiple robots in group, all robots in group should take the same mission. Points corresponding to each mission can be gained only once for each team.

2. Without triggering any alarm of laser beams, if robot (or robots in group) can turn off laser beams and pass the zone safely, it means the mission completed and the team managed to gain the points.

3. The mission will be aborted if alarm of laser beams is triggered. In such condition, points of previous safely passed laser beams are valid and counted, but the remaining laser beams will contribute no more points. Robot (or robots in group) can still continue the remaining contest.

4. The space of Zone B is as the diagram below: (The laser beam locations, angles, colors etc. are for reference only, not the real effects.)



Missions	Goals	Conditions	Points
Dodge laser beams	Robot should pass laser beam safely without triggering alarm when the laser beam is on.	The space size is about **1.5m (width) * 2.6m(height)**. There is a single laser beam at each laser beam position. Robot will gain 5 points by safely dodging 1 bundle of laser beams.	**5*3**
Turn off laser beams	Robot should open the door of control box, and press the switch button inside to turn off laser beams.	The control box is on the ground of the space entrance, with size about **30cm(length) * 10cm(width) * 40cm(height)**. The box door can be directly opened by pulling its handle lightly. The switch button is on the back side of the control box.	**15**

/Mission Zone C: Invasion /

1. The first mission "Disturb surveillance camera" is required to be completed at the first place, otherwise it can be ignored.
2. For other missions except the first mission "Disturb surveillance camera" below, robot can take one or multiple different missions in any order. If there are multiple robots in groups, these robots can take different missions simultaneously.
3. Points of each mission completed will be counted together.

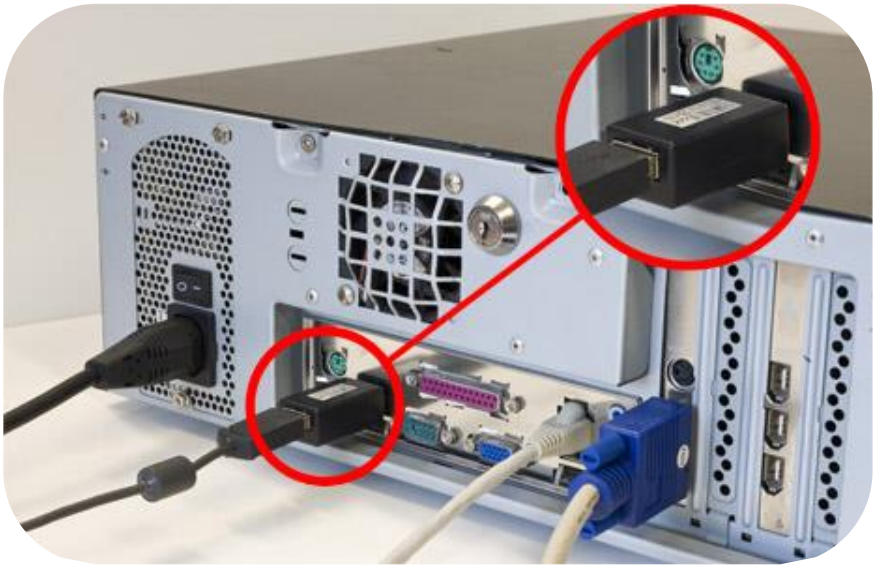
Missions	Goals	Conditions	Points
Disturb surveillance camera	Robot should disturb surveillance camera so that the camera could not monitor the room in efficient way.	The camera is on the wall, height about **2m**. The connection between camera and the holder can be turned round by force. The disturbed status should sustain to the end of invasion.	**50**
Place a covert listening device	Robot should place a dummy covert listening device at the specified place under a chair bottom.	Ordinary chair will be used**.** The dummy covert listening device is provided by player, size not exceeding **0.5cm * 5cm * 5cm**	**20**

Open safe to get information on card	Robot should input password of safe to open it, and get information printed on a card inside.	The safe is on the ground. The size of password panel is about **5cm * 5cm**. The safe password will be provided by organizer. With correct password typed, the door of safe can be opened directly by pulling its handle lightly. The card is **A5** size with plaintext information printed on top of it, laid on the bottom of the safe.	**40**
Open a book to get information printed on card	Robot should get the information on a card which is placed between pages of a book on desk	The book is about **A5** size, thickness about **1cm**, laid on ordinary desk, book spine align with the edge of desktop. The card is **A5** size with plaintext information printed on top of it, laid between pages of the book.	**50**
Plug a malicious USB device to computer	Robot should plug a malicious USB device to computer and press the power button to turn it on.	The computer case is vertical on the ground. The USB port (**height 20cm – 25cm**) and power button (**height about 10cm**) is on the front panel of computer. The USB device will be provided by organizer.	**60**
Plug a keyboard recorder	Robot should pull out the keyboard from computer USB port, and plug a keyboard recorder between keyboard and USB port on the back panel of computer.	The computer case is vertical on the ground. The USB port (**height 18cm – 24cm**) is on the back panel of computer. The keyboard recorder will be provided by organizer. (Check the keyboard recorder example picture below)	**120**

Safe example:

Computer example:

- **Keyboard recorder example:**



/ Retreat Mission /

Missions	Goals	Conditions	Points
Retreat	Robot (or all robots in group) should retreat back to outside of room in reasonable and safe way.	Robot (or all robots in group) can retreat back to parcel and restore the parcel to its original status, or get out of lab room via window or ventilation pipe. Retreating through door is not allowed. Robot can take this extra mission only after finished at least 1 mission of Zone C.	**10**

Award Criteria

1. Criteria: Team should gain at least 50 points to be awarded.
2. Ranking: Team ranking is based on total points of each team. If there is a tie, the ranking will be determined by judges according to:
   a) Control manner: Robot acting autonomously will be in higher ranking position than remotely being controlled by player.
   b) Mission difficulty: Ranking according to the highest points of the each completed Zone C mission. Higher points higher ranking.
   c) Mission time: Ranking according to the total time consumed when robot completed its last Zone C mission. Less total time higher ranking.

Contact Us

Registration: Please submit your online registration here **Registration Form**

For any questions, please send email to **cfp@geekpwn.org**.

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