Task 4 - Biped Patrol

Read Me

Greetings from e-Yantra!
Welcome to Task 4 of Theme Biped Patrol.

In this Task you will perform 4 experiments and record videos for the same.

1 Balancing at One Point

1.1 Balancing the Medbot at one point without medical items

[15 marks]

- In this experiment the Medbot has to balance itself at one point for **30 seconds**, in the Parking Area of the arena. There should be no intervention from remote control.
- In this scenario, while balancing at one point the Medbot is not allowed to oscillate more than ± 2.5 cm. To ensure this make two parallel lines 5 cm apart each other and place the Medbot in the middle of them while starting.

1.2 Balancing the Medbot at one point while holding a FAK/MB

[15 marks]

- In this experiment the Medbot has to balance itself at one point for **30 seconds**, in the Parking Area of the arena. While balancing the Medbot also has to hold one FAK or MB using the electromagnet. There should be no intervention from remote control.
- In this scenario, while balancing at one point the Medbot is not allowed to oscillate more than ± 2.5 cm To ensure this make two parallel lines 5 cm apart each other and place the Medbot in the middle of them while starting.

2 Tracing figure of 'S'

[30 marks]

- In this experiment the Medbot has to traverse through a path in shape of alphabet 'S'. For making the robot traverse this path you must control the Medbot through the wireless remote.
- The path to be traversed is a rectangular 'S' shaped path with each side of **1 meter** length. Refer to **Figure 1** below.

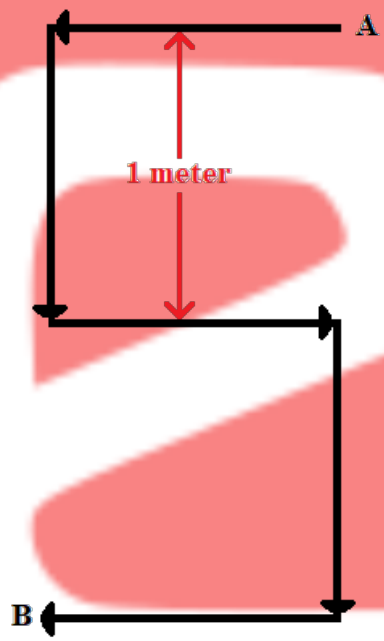

Figure 1: S shape with 1 meter length of all sides.

Note: Create this shape using electrical tape on the floor.

- The Medbot should complete the traversal of path from **point A to point B** in **60 seconds**.
- The scoring of this experiment will be as follow:

Score = 30 if $t \leq 60$ seconds
Score = $30 - (t - 60) * 0.5$ if $t > 60$ seconds

3 Crossing the Bridge

[40 marks]

- In this experiment the Medbot has to cross the Bridge from **point A to point B** then back from **point B to point A**. For making the robot traverse this path you must control the Medbot through the wireless remote. Refer to **Figure 2** below.

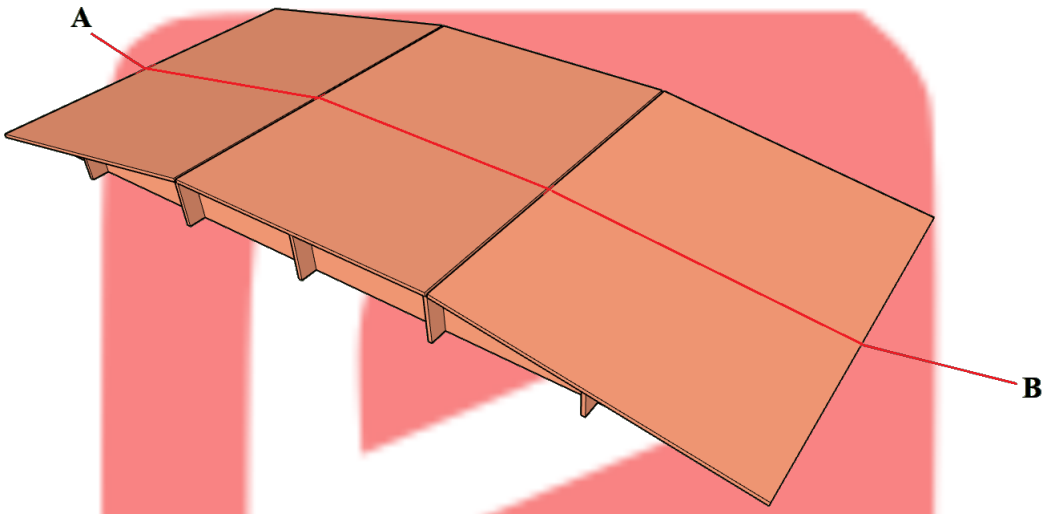

Figure 2: Crossing the Bridge

- The Medbot should complete the traversal of this task in **90 seconds**.
- The scoring of this experiment will be as follow:

Score = 40	if $t \leq 90$ seconds
Score = $40 - (t - 90) * 0.5$	if $t > 90$ seconds

Submission Instruction

- All the videos shall be recorded in well illuminated space.
- You can either record all the tasks in one single recording shot or you can record each task's video separately and then combine them into one single video.

- The resolution of the video should be good enough for judging. You have to use an 8 Megapixel or higher camera to shoot the video. The video aspect ratio must be 16:9. While shooting the video do not move the camera. Record the video from a fixed camera position and angle. You can use a tripod for this purpose.
- In this folder you will find **"TeamID.pdf"**. Print "TeamID.pdf" on an A4 paper and fill the details in it. It is the team intro display sheet which you must show at the start of each experiment.
- Length of the final video of this task can not exceed 4 minute 30 second limit.
- The video should be named **"BP_<Team_ID>_Task_4"**. Upload the video on Youtube. The video should be uploaded under **Unlisted Category**. Refer to image below:

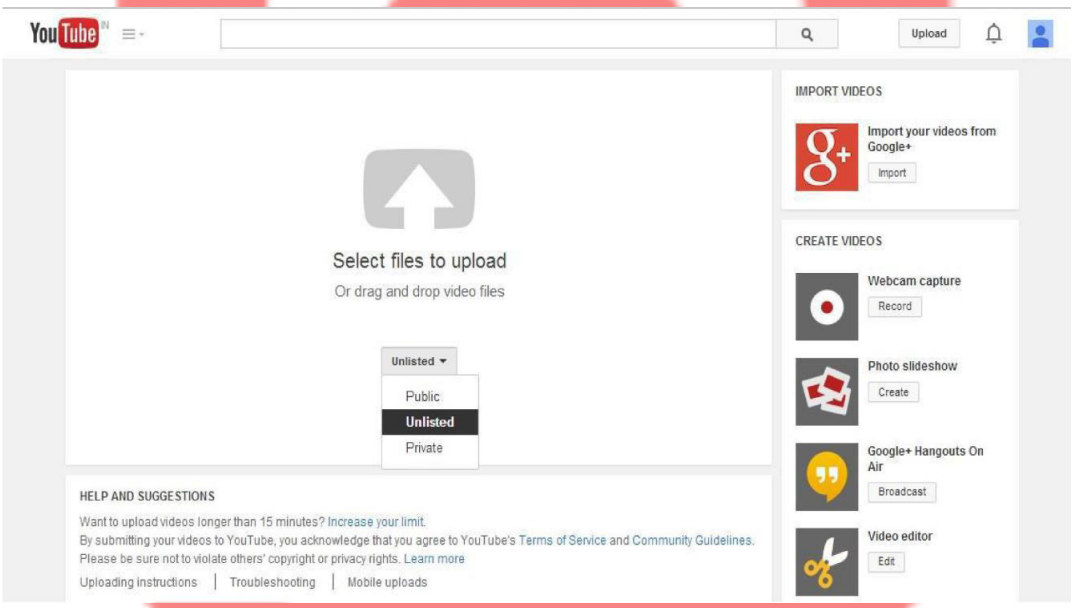

Figure 3: Unlisted video category

- Upload the **Youtube link** of the video uploaded on the eYRC Portal under the space provided on Task 4 page.

Best of Luck!!!