

## **MDP Coordinator's Decision is FINAL!**

### **MDP Challenge Rules**

1. All teams taking part in the challenge for each week **MUST** place their Equipment (Laptop, Tablet and Robot) in the Quarantine area before the Arena Layout is released.
2. The sequence of the teams will be random.
3. Each team must ensure that the obstacles are set-up according to the official layout given by the supervisors.
4. If the challenge-run proceeds with the wrong layout, the team will **NOT** be given a second chance and the exploration score will still be based on the official layout given by the supervisors.
5. Once a team is notified that it is their turn, they have 2mins to take their equipment from the Quarantine area and do their setup.
6. If the team is unable to complete their preparation within the 2mins, they can still carry-on, but they will now be using part of the 6mins Exploration time.
7. When the team is ready, they should inform their supervisor. After the supervisor has given the approval to start, the team can Start (Press the EXPLORE button).
8. In order to qualify for LeaderBoard A, the robot **MUST** enter the GOAL zone and finally return back to the START zone and STOP within 6mins.
9. Throughout the exploration, the Virtual Map on both the PC/Laptop and the Tablet must be updated in real-time.
10. The team must shout-out "Exploration Done!" once the robot has finished the exploration phase. This will signal the supervisors to stop the Exploration Timing.
11. Once the robot completes Exploration, it has 1min to do its own realignment to prepare for the Fastest-Path run. This must be done independently by the robot **WITHOUT** any intervention from the team through the Tablet or Laptop.
12. During this time, it is the team's responsibility to ensure that the Supervisor's take a photo of the **Virtual Map** and the **MDF String** from the **Android Tablet Screen**. At the end of the whole run, the team must e-mail the supervisor a copy of the MDF string and the screenshot of the tablet showing both the Virtual Map and the MDF string.
13. When the team is ready for the Fastest Path, they should inform their supervisor. After the supervisor has given the approval to start, the team can proceed (Press the FASTEST-PATH button).
14. The timing will stop once the robot enters the GOAL zone and STOPS.
15. In order to qualify for LeaderBoard B, the robot **MUST** stop after it enters the GOAL zone and the FASTEST-PATH time must be within 2mins.

### **Frequently-Asked Questions**

1. **When is my robot deemed to have reached the GOAL/START?**  
Once the midpoint of the robot is **INSIDE** the GOAL/START.
2. **During the Exploration Phase, my robot DID NOT enter the GOAL zone. Can I still do the Fastest-Path run?**  
Yes, as long as the robot managed to come back to the START zone within the 6mins deadline, you can attempt the Fastest Path.

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- 3. During the Exploration Phase, my robot entered the GOAL zone but did not make it back to the START zone. Can I still do the Fastest-Path run?**

No. If the robot did not come back to the START zone by the end of the Exploration phase, you CANNOT proceed with the Fastest-Path run.

- 4. During the Exploration Phase, my robot first entered START zone then GOAL zone and then came back to START zone. Does that qualify for Leaderboard A?**

Yes, as long as the robot enters both the GOAL zone and START zone during the Exploration phase and returns back to the START zone within 6mins, you qualify for Leaderboard A.

- 5. During the Exploration Phase, can my robot enter the START and GOAL zone a few times?**

Yes. During the Exploration Phase, the robot can enter both the START and GOAL zone several times. In order to stop the Exploration Timing, the team must shout-out "Exploration Done!" so that the supervisors are aware.

- 6. What if my robot unexpectedly starts to move again after we have informed the supervisors that Exploration is complete?**

Once the supervisors have been informed that Exploration is complete, the 1 min interval time will start. All additional movements will be considered to be part of the 1 min interval time.

- 7. What if my robot does not return back to the START zone at the end of the Exploration phase. Can I still proceed with the Fastest-Path run?**

No. The robot must come back to the START zone in order to qualify for the Fastest-Path run.

- 8. During the Exploration phase, my robot hit some obstacles. How will the penalty be computed?**

Each new/distinct hit will add 10s penalty to the Fastest-Path timing.

- 9. What is meant by each distinct Hit/Contact with Wall/Obstacle?**

It refers to any NEW move that is made while still having contact with an obstacle/wall.

E.g. The robot touches an obstacle and stops. -> 10s Penalty

The robot continues to turn left/right while maintaining contact with the obstacle/wall.

-> 10s Penalty for each turn as long as contact is maintained.

E.g. Robot touches the Side Wall. -> 10s Penalty

The robot continues to move from grid-to-grid while maintaining contact with the wall.

-> 10s penalty for EACH grid-to-grid move as long as contact is maintained.

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### **10. What if my team can't complete the preparation within 2mins?**

You can still proceed, but you will start making use of your Exploration time. For e.g., if you take 3mins to complete the preparation, then you have 5mins left to complete the exploration.

### **11. What if my robot is not ready for the Fastest-Path run within the 1min limit after the Exploration phase?**

Your team CANNOT proceed with the Fastest-Path run if the 1min interval time is exceeded.

### **12. My team exceeded the 1min time limit for the interval but we were not aware and proceeded with the Fastest-Path run. Will we still qualify for Leaderboard B?**

The Fastest path timing WILL NOT be considered for Leaderboard B.

### **13. My robot successfully completed the Exploration Phase and came back to the START zone. However, it not responding when I press the Fastest-Path button. Can I just press the reset button on the robot?**

You are NOT allowed to have any physical contact with the robot once the Exploration phase starts, till the robot completes the Fastest-Run. Any physical contact in-between will disqualify the run.

### **14. Can my robot Bull-Doze through all the obstacles and reach the Goal?**

Bull-Dozing is STRICTLY not allowed. Any team that attempts it will be disqualified.

### **15. Will there be any obstacle placed within the START and GOAL zones?**

The START and GOAL zones will be free from obstacles.

### **16. My team successfully completed the Exploration and showed the MDF string on the Laptop and not on the Tablet. Will it be accepted?**

In such cases, the team's MDF string WILL NOT be accepted and they will NOT qualify for Leaderboard A. However, the team can still proceed to do the Fastest Path run.

### **17. My team was able to show the real-time update of the virtual map only on the laptop and not the android device. Will the exploration be accepted?**

In such cases, the team's MDF string WILL NOT be accepted and they will NOT qualify for Leaderboard A. However, the team can still proceed to do the Fastest Path run.

### **18. My team completed the exploration successfully and the Virtual Map correctly reflects the setup of the obstacles in the Arena. However, the MDF string that was generated was wrong. Can the score be based on the Virtual Map instead of the MDF?**

The exploration scoring mechanism is based ONLY on the MDF string. It is the team's responsibility to ensure that the MDF string is generated according to the specifications given in the guideline document.

### **19. Will teams with the same exploration score be given the same marks?**

We will use the exploration timing to differentiate teams with the same exploration score.

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**20. Can we make assumptions about the Arena and the obstacle placement while generating the MDF string?**

The MDF string should be generated based ONLY on the actual exploration of the arena. If a team makes any assumptions without any actual exploration, the MDF string will be considered void, and no score will be given.

**21. Our team has some disagreements with our lab supervisors with certain aspects of our competition run. Who can we approach?**

Please approach the MDP coordinators to review your case. It will be good to provide any form of evidence such as video recordings. The coordinators will review the case with all available information.

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