

# CYBATHLON 2024

## Wheelchair Race



### Points

Pilots can achieve 10 points per tasks with a maximum of 100 points per run.

### Scoring

Pilots with the highest score and best time are rank best.

### Competition rule

Only powered wheelchairs are allowed. All manipulations must be done by the robotic manipulator.

### Inclusion criteria

Pilots with a severe walking disability due to any kind of central nervous system disease or injury.



## Tasks

### 1. RESTAURANT

**Task:** Approach tables with the wheelchair so that half their thighs are under the tables.

**Test:** Ability to navigate the wheelchair in confined space and sit frontally at a table.



### 2. STAIRS

**Task:** Ascend and descend a straight staircase as well as halt the wheelchair in the process.

**Test:** Ability to ascend and descend a staircase.



### 3. PICK UP

**Task:** Pick up a bottle from the floor and place it on a table.

**Test:** Ability to deal with randomly scattered objects to remove the obstructions.



### 4. TILTED PATH

**Task:** Negotiate a tilted path.

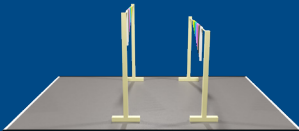
**Test:** Ability to manage and control a wheelchair on a tilted path.

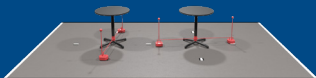


### 5. UPLIFT

**Task:** Elevate the wheelchair to reach a specific height.

**Test:** Ability to adjust the height of a wheelchair depending on the situation.





## 6. CROWD

**Task:** Pass between the table without touching orbiting robots.

**Test:** Pilot's control and wheelchair's manoeuvrability and speed.



## 7. WINDING STAIRS

**Task:** Climb and descend a flight of winding stairs.

**Test:** Ability of a wheelchair to ascend and descend the winding stair.



## 8. DOOR

**Task:** Open, pass through, and close a door using an external robotic manipulator.

**Test:** Ability to open, pass through and close a door.



## 9. ROCKY TERRAIN

**Task:** Navigate a stony path with the wheelchairs.

**Test:** Ability to navigate wheelchairs on uneven surfaces - paths in nature.



## 10. DOORSTEP

**Task:** Cross a large doorstep.

**Test:** Wheelchair's ability to negotiate different types of entryways.

# CYBATHLON WHL



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# maxon



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STADTKLOTEN