CYBATHLON 2024 – Information for setting up a Team Hub (local race organisation in your country)

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Versioning

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1. Your institution - an official CYBATHLON team hub?

Teams can choose to travel to Zurich, Switzerland or to participate remotely in the CYBATHLON 2024 and organise their own local competition venue, an official CYBATHLON Team Hub.

Setting up a team hub offers many **advantages** for a team such as:

- Invite local media, sponsors, and partners to follow the competition on site, engage national press, and increase social media coverage

- Promote your university or company to a global audience during the livestream by being one of the global competition sites

- Invite local audience and create an event on assistive technology and inclusion beyond the competition, if desired

- Avoid travelling fatigue and jetlag which helps teams and pilots to be fitter for the competition days

- Simulate more closely the competition conditions and optimise final training

- Reuse the competition infrastructure already used for the training

- Share set-up costs and organisation workload when several teams join the same team hub

- Make an important contribution to a sustainable CYBATHLON 2024 by reducing emissions caused by travel

Watch the livestreams of the last CYBATHLON Challenges 2022 and 2023 edition where different hubs from all over the world participated.

There are certain requirements that a Team Hub must meet to ensure a fair competition and to make the broadcast a success. We will assist you in setting up your Team Hub with guidelines, provide you with certain materials and do tests together with you.

In a short summary, **according to guidelines provided by CYBATHLON**, a Team Hub needs to
- provide the venue

- build and setup the competition infrastructure

- attach the branding (CYBATHLON partner/sponsor logos, but also local partners/sponsor allowed)

- film the competition (can be done with a smartphone and gimbal)

- take care of the local event operation (hosting, security, etc.)

- in general, follow the instructions from the CYBATHLON mission control center in Zurich
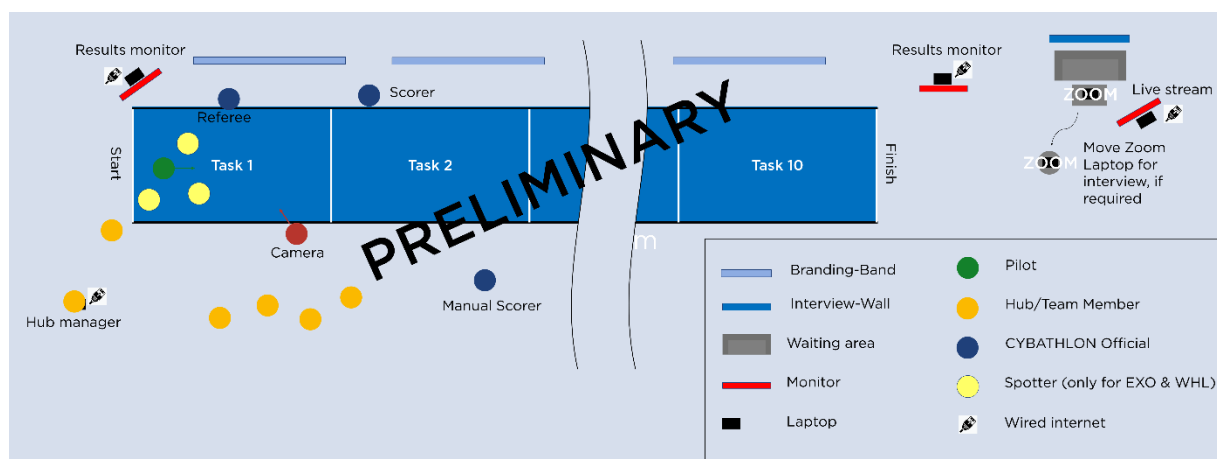
2. Venue booking

Booking of the Team Hub venue should be scheduled for at **least 5 days, from October 23 to October 27, 2024**. The venue needs to be accessible for certain hours before the event to conduct the test sessions as mentioned in paragraph 8.

3. General setup

To carry out a competition at your hub you require space for people and infrastructure. Beside the people and infrastructure involved in the races such as the pilot, CYBATHLON officials, and the competition infrastructure, you also need space for managing the actions in your hub and for presenting the results and the livestream to the participating teams and the audience (Figure 1).

Figure 1: General setup with the people and the infrastructure involved at your hub.

The tasks are set up in a predefined order. The racetrack can be set up in two possible layouts, depending on the space available at the competition venue.

Be aware that for hub management, interviews, and teams you need some extra space.

➔ **In case more than one team is participating in the same discipline at your hub, you need to setup more than one racetrack. For example, if you have two wheelchair teams, you need to provide two racetracks in case both teams start in the same qualification heat or both teams go to the final heat. Note that in a heat, four teams start in parallel.**

3.1. **ARM, LEG, EXO, WHL, ROB, VIS Disciplines**

In the ARM, LEG, EXO, WHL, ROB and VIS discipline, each task will take place on an area of 3m x 5m (10 tasks in total). Additional space around the tasks is required for safety, branding, monitors, and filming. In total an area of 56m x 6m (Figure 2) **or** 33m x 11m (Figure 3) is required, depending on the task set up.

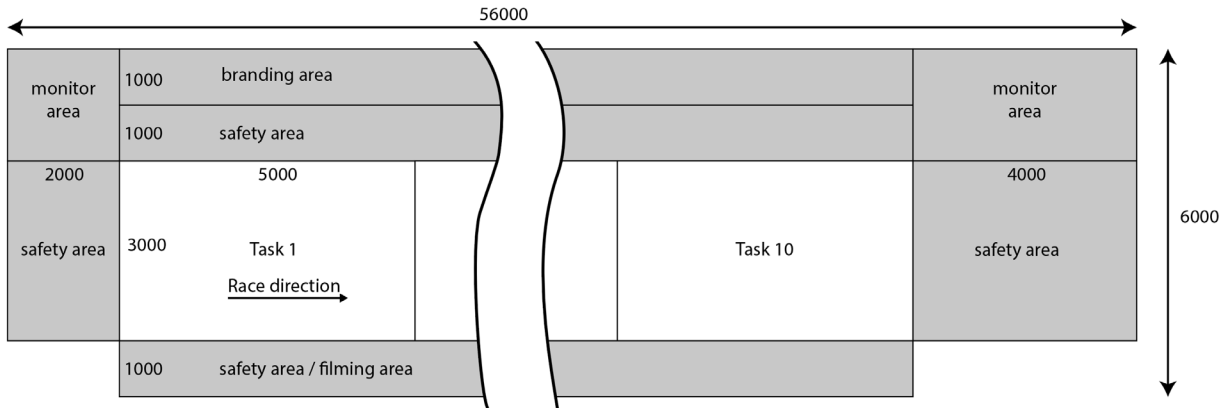Figure 2: Task set up "in line" for the disciplines ARM, LEG, EXO, WHL, ROB and VIS.

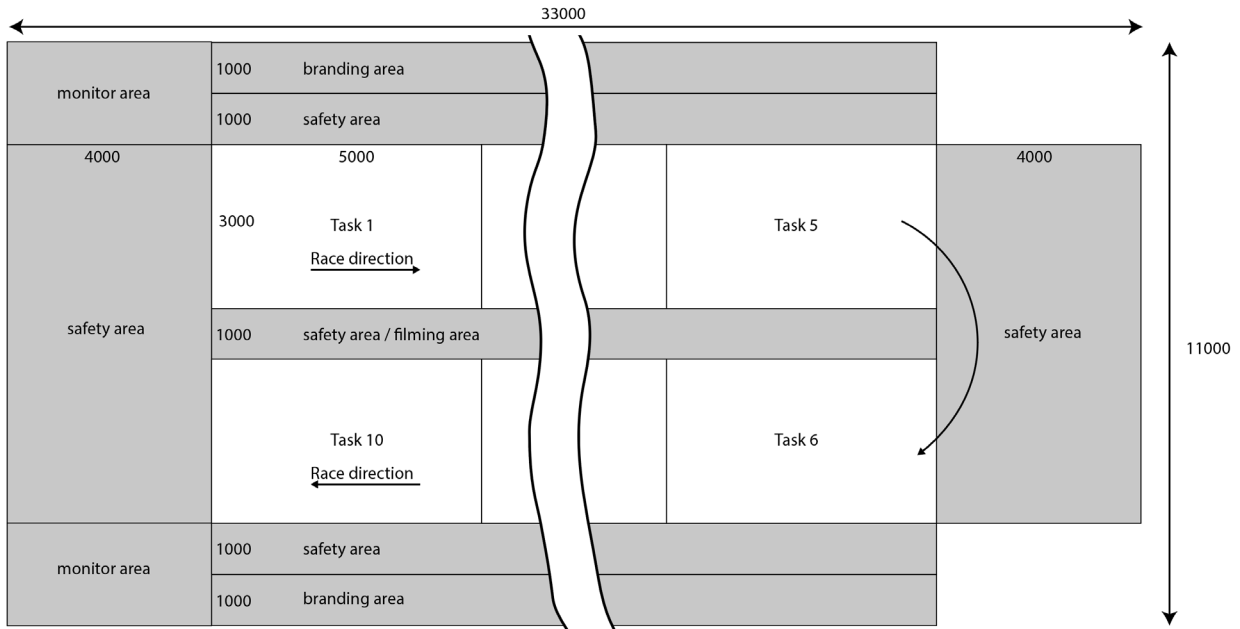Figure 3: Task set up "in parallel" in the disciplines ARM, LEG, EXO, WHL, ROB and VIS.

Figure 4: Example of an ARM race, with "in line" task set up:

Figure 5: Example of an ARM race, with "in parallel" task set up:

Figure 6: Example of a WHL race, with "in line" task set up, with 2 race tracks, in larger place with public viewing:
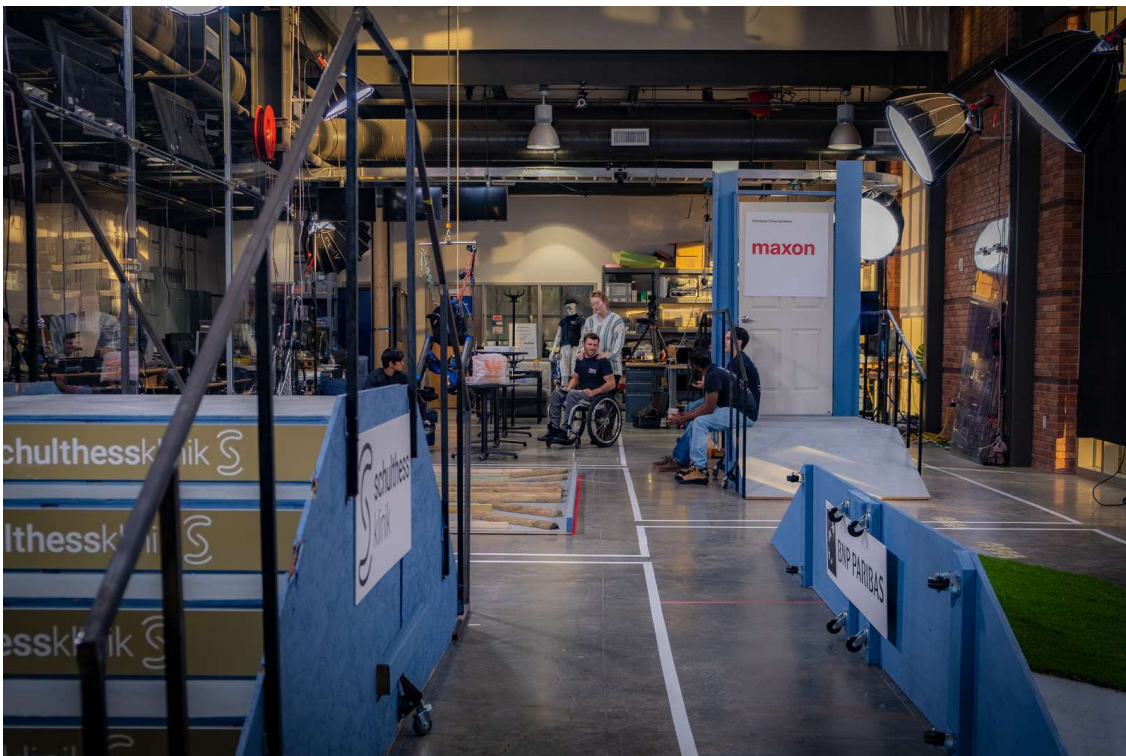

Figure 7: Example of an EXO race, with "in line" task set up, in larger place with public viewing:

Figure 8: Example of a LEG race, with "in line" task set up, in larger place with public viewing:

Figure 9: Example of an EXO race, with "in parallel" task set up:

3.2. **BCI, FES Disciplines**

The competition infrastructure for the BCI and FES disciplines requires 5m x 6m (Figure 10).

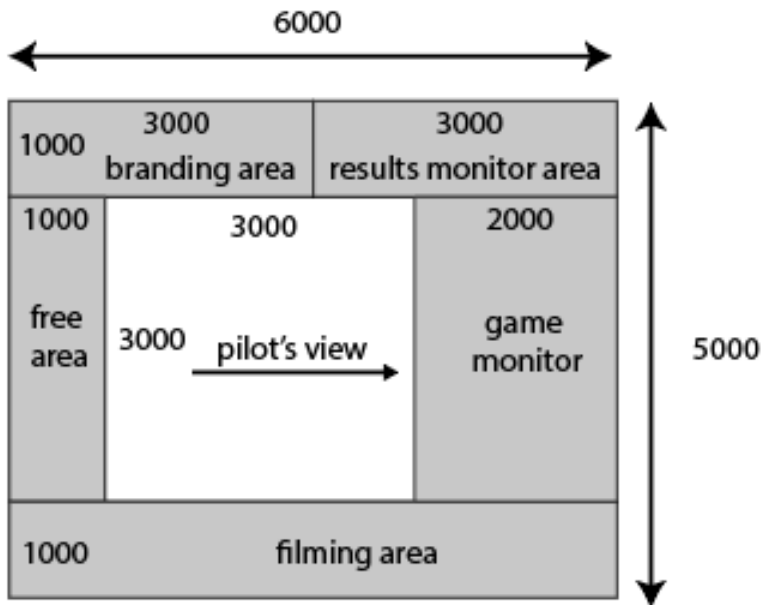Figure 10: Competition set up in the disciplines BCI and FES

Figure 11: Example of a BCI setup:

Figure 12: Example of a BCI setup:

Figure 13: Example of a FES setup:

Figure 14: Example of a FES setup:

4. Competition infrastructure

Please refer to the Races & Rules as well as to its "Appendix 1: Competition Infrastructure" on how to set-up the tasks and for information on the materials used.

Depending on the discipline, certain defined material will be sent to you prior to the event (marked as "*provided by CYBATHLON*" in the Appendix 1: Competition Infrastructure. All other material needs to be organised and bought by the teams themselves.

Below is a cost estimation per discipline for one track with objects bought and built in Switzerland that might help you to estimate the costs in your country:

Discipline	Cost estimation competition infrastructure (objects bought and built in Switzerland)
ARM	CHF 2,500
BCI*	CHF 2,000
EXO	CHF 17,500
FES*	CHF 2,000
LEG	CHF 20,000
ROB	CHF 4,500
VIS	CHF 3,500
WHL	CHF 19,500

*BCI, FES: only certain IT infrastructure

5. IT infrastructure

In general, it is important to have stable wireless internet (WiFi) available at your Team Hub venue. The camera device requires a **20Mbit/s stable upload**. Some people involved in competition management also require bandwidth for video communication. Please use a wired internet connection if possible.

In addition, your Team Hub venue should have mobile internet access so that filming and scoring apps can use it as a backup for sending and receiving data. Mobile Internet is also recommended to set up a backup WiFi in case other wireless Internet sources fail.

To present the results in real time to the pilot and to share the CYBATHLON live stream to the pilot, at least **three monitors (27'' or bigger)** are required at your hub (figure 15, figure 16). The monitors must be connected to a laptop which has access to wired internet. Further laptops will be required to communicate with the competition management and for Zoom interviews (figure 17).

Figure 15: Example for screen in the start area (front end)

Figure 16: Example for screen in the finish area (front end)

Figure 17: Example for laptop for zoom interview

6. Broadcasting

You will film the pilot's performance and transfer the video and audio signal live to the production room at CYBATHLON headquarters using one of the following two setups:

Smart phone setup	**Camera setup**
iPhone or Android phone with "TVU Any-where" App (free of charge)	professional camera with wireless connection to a "TVU One Transmitter"

Figure 18: Smart phone setup

Figure 19: Camera setup

In both set-ups a stabilizing system (e.g., a gimbal) is required.

During the competition, our production team will be in constant contact with your camera person, giving her or him instructions and guidance on filming.

Figure 20: CYBATHLON headquarters production room:

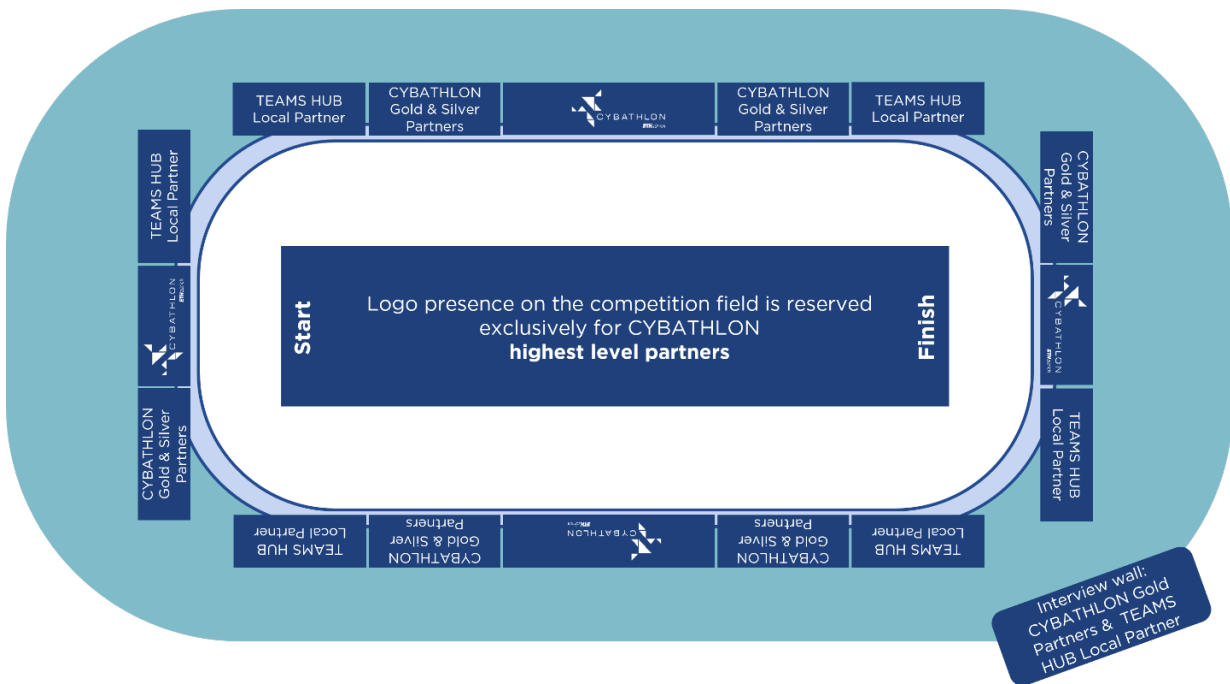

Figure 21: Camera person in action:

7. Branding

The local venue will include branding of CYBATHLON, of the CYBATHLON partners, and, if desired, of the partners of the participating teams (e.g., sponsors, team's university, team's company, etc.). 50% of the venue branding space is reserved for CYBATHLON branding. The other 50% are divided equally between partners of the CYBATHLON and partners/sponsors of your team (see Figure 5 Branding at team's hub). Branding on the racetrack and competition infrastructure is reserved for CYBATHLON branding.

All branding will be done in blue & white or white & blue (white logo on blue background or vice versa) or according to the instructions of CYBATHLON. Colour codes are defined by CYBATHLON.

Certain branding material will be sent to you by us, others we ask you to create or print on site.

Figure 22: Example of branding a team hub with one task

8. Test sessions

CYBATHLON will conduct various test sessions with you to help you set up the venue, infra-structure, and technical equipment and to clarify any questions with you.

Type	Description	Date
Infrastructure and remote check	Remote test session for technical infrastructure check, WiFi performance and video signal connectivity at the venue, results system components test run	A few weeks before the competition
Wifi check	WiFi performance and video signal connectivity at the venue, results system components.	A few weeks before the competition
Course check	Local test session at the venue for official check of infrastructure and markings on the race track some days before the competition	A few days before the competition
Rehearsal	Rehearsal of competition	1-2 days before the competition
Competition & live streaming	CYBATHLON 2024	25 – 27 October 2024

9. Hub Staff

9.1. CYBATHLON Officials

CYBATHLON officials are the competition staff who carry out tasks of the competition management at the Team Hub, such as course and safety checks, refereeing (referees), and scoring and time keeping (scorer).

The recruiting of the CYBATHLON officials for a Team Hub is organised together, by CYBATHLON and the Team Hub. Without local CYBATHLON, the competition cannot be done. The education of the referees and scorer is done by CYBATHLON.

9.2. Additional Team Hub staff

In addition to the CYBATHLON officials, you will need staff (e.g., team members, volunteers etc.) to assist you in running the competition:

- 1 hub manager who organises the hub and stays in contact with us throughout the competition via the communication app "Discord"

- 1 - 2 persons filming

- 1 IT person to support you with technical problems

- Only for disciplines WHL & EXO: 2-3 spotters who spot the pilot on the competition track for safety

- Only for disciplines WHL, EXO & ROB: 1 responsible for the robots used in the "Crowd" task

- In case you host more than 1 discipline at your venue: 3-4 movers who help you setup and dismantle the different tracks

Figure 23: CYBATHLON official and spotters:

Figure 24: CYBATHLON official

10.   Team Hub funding

We offer financial support to **teams from universities and non-profit organisations** for expenses related to participation in the CYBATHLON, such as venue rental and technical equipment for your Team Hub.

CYBATHLON has limited funding resources, applications are processed on a first come first served basis. The amount granted depends on the discipline in which a team is participating, the infrastructure provided by the CYBATHLON organisers, and the team's home address.

Discipline	Worldwide (outside Switzerland)
ARM	up to CHF 1,000
BCI	up to CHF 1,000
EXO	up to CHF 3,000
FES	up to CHF 500
LEG	up to CHF 3,000
ROB	up to CHF 1,500
VIS	up to CHF 1,500
WHL	up to CHF 3,000

The amount is granted per team. Hubs hosting more than one team at their location can apply for the total amount for their participating teams.

For more information, please check our Terms & Conditions.