



White Rabbit

COLLABORATION

Table of Contents

| | |
|--|-----------|
| Introduction | 3 |
| Why the Collaboration? | 4 |
| Who is it aimed at? | 5 |
| The Collaboration in a Snapshot | 6 |
| Collaboration Board | 6 |
| Collaboration Council | 6 |
| The Bureau | 6 |
| Committees | 7 |
| | |
| What can you do in the Collaboration | 8 |
| Determine the future of the technology | 9 |
| Participate in R&D Projects | 10 |
| Get Support | 11 |
| Attend trainings..... | 12 |
| Get your equipment tested | 13 |
| Get the White Rabbit trademark on your product | 14 |
| Be part of the community | 14 |
| Gain visibility | 14 |
| | |
| How to become a member | 15 |
| Membership fees | 16 |
| Use of collaboration resources | 17 |

Introduction

Since its inception in 2009, the [White Rabbit \(WR\) project](#) aims at providing very accurate and precise synchronisation across devices connected to a network based on an open-source implementation of standards, extending these standards where needed. With the inclusion of WR concepts in the newest revision of the IEEE 1588 Precision Time Protocol (PTP) standard, under the High Accuracy Profile, there is an ever-growing adoption and we have entered a new phase in the history of the technology.

The White Rabbit Collaboration aims to be a friendly, welcoming community which:

- implements the White Rabbit technology with a guarantee that the accuracy of the resulting synchronisation is better than one nanosecond;
- does so in an open-source* way, using licences for hardware, gateware, firmware and software approved by the Open Source Initiative (OSI).

*White Rabbit is licensed under the CERN Open Hardware Licence version 2 or later (weakly reciprocal) and the LGPL version 2.1 or later.

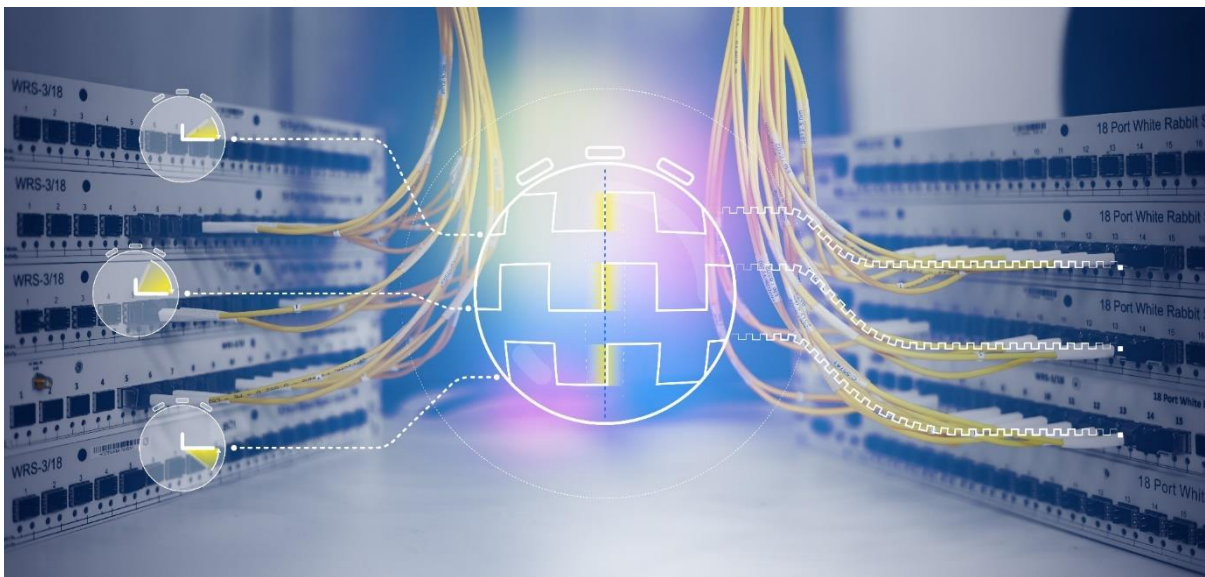
Why the Collaboration?

Throughout this past decade, WR has found many applications beyond CERN. We think it still has a lot of untapped potential: new emerging technologies have more stringent synchronisation requirements while there is an ever-growing overreliance on Global Navigation Satellite System (GNSS) for the distribution of time.

We want to bring all stakeholders of the technology together, identify **common interests** and development needs, and **define together** the future of WR.

By doing so, we want to foster the uptake of the technology in new domains as well as by new actors.

The Collaboration aims to become the global reference point for the White Rabbit technology and a neutral platform supporting all members.



Who is it aimed at?

All stakeholders of the White Rabbit technology.

Whether you are:

- a company that:

- needs precise timing/synchronisation
- provides Positioning, Navigation and Timing (PNT) solutions or data acquisition/control systems
- provides consultancy and expertise related to timing services

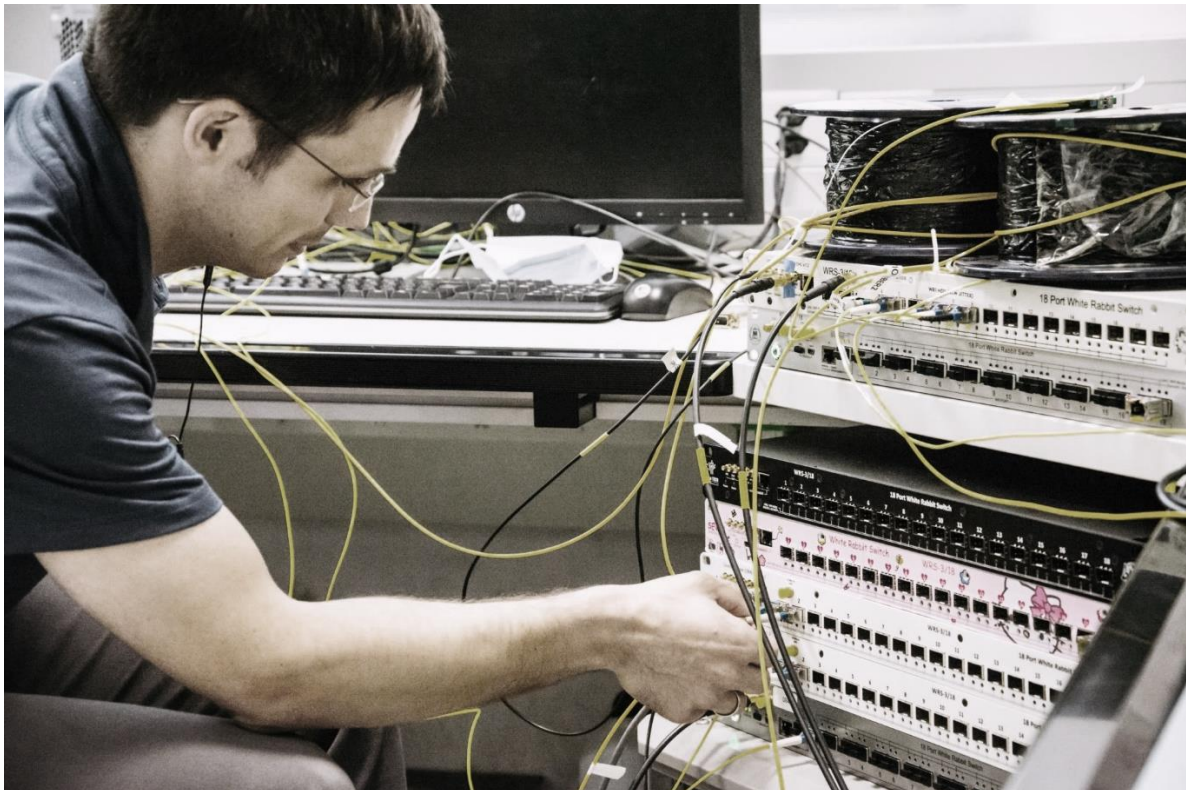
- a National Metrology Institute or National Laboratory

- or a university/ research institute

the collaboration is for you.

How to become a member? Go straight to page 16 to find out.

*Note that members have to be legal persons.



The Collaboration in a Snapshot

The Collaboration will be governed by the [Collaboration Board](#) and the [Collaboration Council](#) and run on a daily basis by the Bureau.

Collaboration Board

This is the body gathering all members, a place to exchange information, discuss and interact with all your fellow counterparts.

As a member you can shape the direction of the Collaboration by exercising your voting rights (one vote per member) and providing your valuable insights.

Collaboration Council

This is a smaller body consisting of non-commercial members (there will be up to one member in the [Council](#) for every five members of the Collaboration). Some decisions will be taken by the [Council](#) after consultation with the [Board](#).

The Bureau

Hosted at CERN, the [Bureau](#) will be composed of [senior engineers](#) with extensive experience in the White Rabbit technology and a [community coordinator](#).

The main task of the Bureau will be to ensure a high-performance core technology through regular [maintenance](#) and [upgrades](#). It is also there to [support](#) all collaboration activities and the day to day running of the Collaboration. The [Bureau](#) will provide support via the online forum, as well as direct, private, support to the members.

Committees

In addition to the [Board](#), [Council](#) and [Bureau](#), several committees may be created to lead the day-to-day implementation of the different activities:

- Training Committee
- Outreach Committee
- Calibration and Testing Committee

If you are interested in a particular topic or have a specific expertise you think the Collaboration could benefit from, this is the right place to get involved.

What can you do in the Collaboration?

The Collaboration will help you get to grips with the WR technology if you are a newcomer. Even if you are not, you can ask for support with any aspects of its implementation or if you simply need some guidance.

The Collaboration gives you the opportunity to support and shape the further development of the technology, so that it best addresses your needs or those of your customers.

For example, if you have new ideas on how to make the technology better or want to explore whether it can be used for a new application, you can propose setting up an R&D project or suggest making an improvement to the technology.

Determine the future of the White Rabbit technology

You will be able to make your voice heard and share your insights and needs with the Collaboration: what aspects and features would you like to have included in future upgrades?

The [Bureau](#) will work to make timely upgrades to the open-source core. Your opinion will be important to determine which aspects they focus on.

Mainstreaming

You have made an improvement and would like it to become part of the WR Technology? Mainstreaming requests can be submitted by anybody (including non-members).

The [Collaboration](#) will decide whether to include these improvements based on the:

- benefits to the larger community
- complexity of incorporating it to the open-source core (resources it will require from the Bureau)

If approved, the [Bureau](#) will be in charge of implementing the mainstreaming request.

Furthermore, you will contribute to the definition of the [clear interface](#) between the open-source core and the periphery. It is often the case that White Rabbit applications need both [extensions](#) to and [modifications](#) of White Rabbit Technology. The Collaboration will serve as a forum to debate, for new projects hosted in the Collaboration, what should be the *extensions* (which could be proprietary or open-source) and the *modifications* (which shall be open-source).

Participate in R&D Projects

You will be able to find partners with similar needs and complementary expertise to define and implement together improvements to the technology.

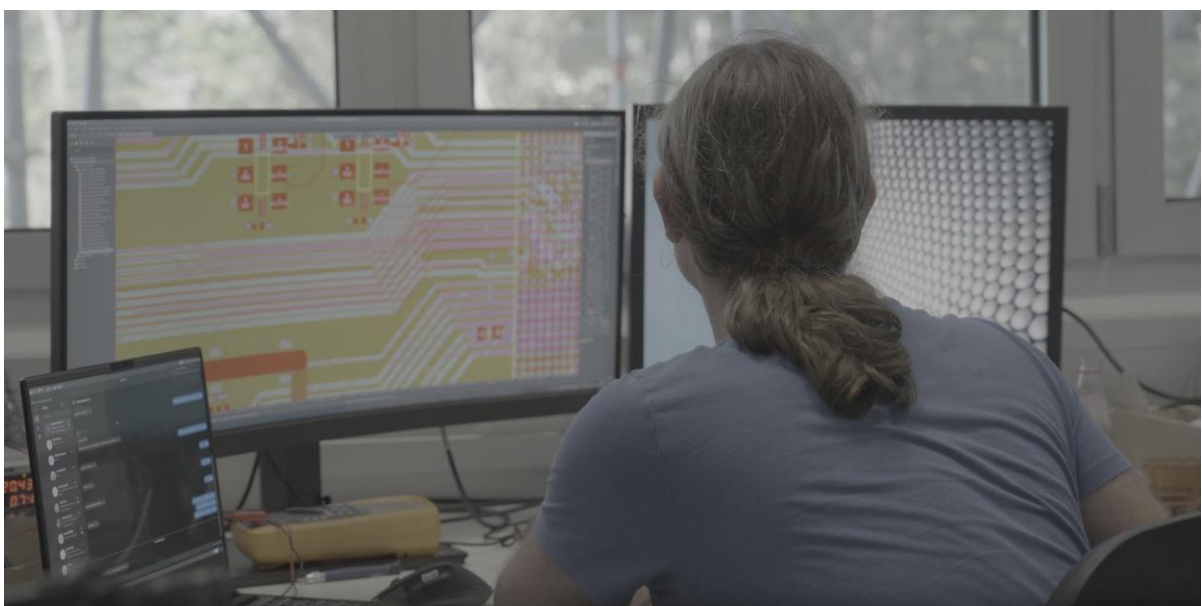
R&D Projects hosted by the Collaboration will aim to:

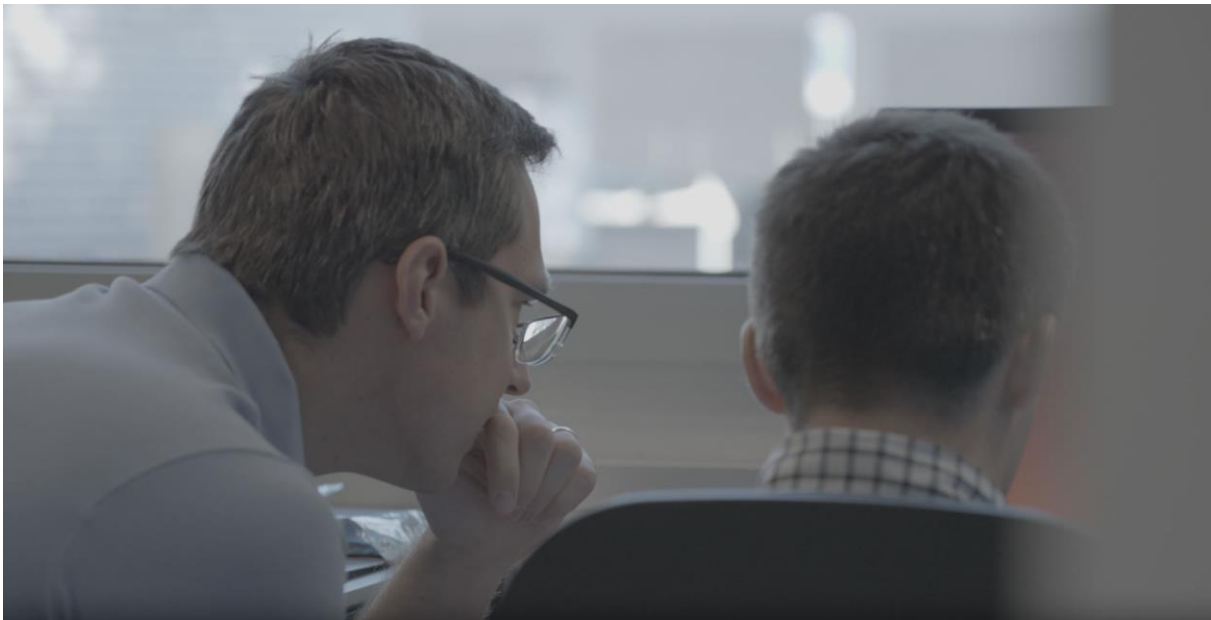
- demonstrate applicability of WR in a new domain
- improve the technology to facilitate its uptake

Possible R&D projects include:

- Demonstrating and facilitating the use of White Rabbit in the control plane of quantum networks
- Using White Rabbit for long distance networks
- Using White Rabbit in telecommunications networks for 5G/6G
- Implementing seamless redundancy in White Rabbit networks
- Implementing the White Rabbit core building blocks in an ASIC

The [Bureau](#) will be there to provide support to the R&D projects.





Get support

Ask your question in the forum

The Forum is open to everybody (including non-members). You just need to register and provide your name, role and affiliation (if you prefer, you can request that these details are only visible to the [Bureau](#)).

Anybody can reply. To be able to reply, however, your name and affiliation need to be visible to everybody.

If you are a member of the Collaboration, the [Bureau](#) will strive to get back to you shortly after you have shared your query. Responses are not guaranteed, however, for non-members.

Benefit from dedicated support

As a member, you can submit a request to receive support.

The [Bureau](#) will set up a meeting with you to understand the problem and determine the resources needed to provide the requested support.

As a member, each year you have 20 hours of [free dedicated support](#) from the [Bureau](#) and up to 30 additional hours, depending on availability.

If more time is required to address your technical challenge, you can agree with the [Bureau](#) on a statement of work. If you would like to proceed and receive support from the [Bureau](#), you will need to provide additional financial support. Alternatively, this request for support can be distributed to all members of the [Collaboration](#), who can offer support according to the terms agreed bilaterally between you and the other member(s).

[Attend trainings](#)

As a member of the [Collaboration](#) you will have the possibility of attending trainings either in person or online.

The [Collaboration](#) will offer a catalogue of trainings, including free trainings for members. Trainings will address fundamental aspects of the technology and its implementation.

If none of the existing trainings address your needs or interests, you will also be able to suggest new ones.

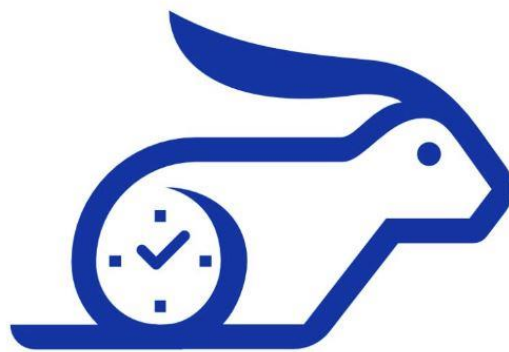
As a member, you can actively participate in creating and delivering the trainings, becoming a local champion of White Rabbit.

Get your equipment tested

You will have the possibility to test your White Rabbit equipment in one of the labs associated to the White Rabbit Collaboration.

By testing your products in the associated lab, you will be able to reassure your customers that your equipment achieves a certain level of [performance](#).

As a member of the [Collaboration](#) you will have the possibility to contribute to the definition of the tests that will be performed by the [associated labs](#).



White Rabbit

Get the White Rabbit trademark on your product

In addition, if you have successfully tested your implementation of White Rabbit, you will be able to apply to use the [WR Trademark](#) on your product, which will be listed in the [White Rabbit Collaboration website](#) (www.white-rabbit.tech).

Be part of the community

The [Collaboration](#) will offer you a neutral space to meet and discuss with other entities that have common challenges and complementary expertise.

The [Collaboration Board meetings](#) will happen twice a year. Informal online meetings will be held regularly, which will be open to all members. The Collaboration Board Chair will take this opportunity to make any announcements or updates. Members can present a topic of interest. The presentations will be followed by an open discussion on the topic presented or another subject that is brought up. The intention is to create [a lively global community](#) with a regular space and time to exchange.

You can also become a [local champion](#) of White Rabbit by organising activities in your region. The [Bureau](#) will strive to support you in your efforts.

You have gone a step beyond contributing to any aspect of the Collaboration? We plan to give awards to recognise the impact you made.

Gain visibility

As a member, you will have the possibility to let others know of your success stories or use case of White Rabbit by publishing an article in a dedicated section of the [White Rabbit Collaboration website](#) (www.white-rabbit.tech).

Furthermore, as a member you will be able contribute to defining and implementing the strategy of how to best promote the White Rabbit [technology](#) and [Collaboration](#).

How to become a member

Here you will find all the information you need to make the final decision.

By joining, you will be embarking in a journey of discovery with us and the rest of the [White Rabbit community](#)!

Membership fees

The aim of the Collaboration is to become the reference point for the White Rabbit Technology and as such, we strive to be inclusive, with fees adapted to each of its member types.

| Entity Type | Size/sub-type | Annual Fee (CHF) |
|-------------|---|------------------|
| Companies | Large | 50,000 |
| | Medium | 25,000 |
| | Small | 15,000 |
| Public | National Metrology Institute, National Laboratory, Research Institute | 15,000 |
| | University | 10,000 |

Companies:

You will get a discounted rate (see table above) if you are considered to be a medium or small sized company following the criteria below:

Large company: ≥ 500 employees

Medium sized company: $50 \leq \text{employees} < 500$

Small company: < 50 employees

The Collaboration launched in January 2024, if you join throughout the year the annual fee will be adjusted accordingly.

Use of Collaboration resources

The resources of the Collaboration will be used primarily to fund the [Bureau](#) and ensure the long-term financial stability of the Collaboration.

The [Collaboration](#) is as strong as the commitment of its members and their vision for the technology and community they help to shape. The White Rabbit technology is the result of the work of many. In recognition of this, the Collaboration will aim to distribute excess funds between the members that have contributed along the years to the development of the technology.

We count on your support and participation to reach new heights together!

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www.white-rabbit.tech

**Join us to
shape the future of
the technology together**



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