

QUANTUM COMMUNICATION NETWORKS WORKSHOP

UNIVERSITY OF AVEIRO - PORTUGAL



Group photo: Quantum Communication Networks Workshop, University of Aveiro, Portugal.

From February 26 to 27, the **University of Aveiro** hosted the "Quantum Communication Networks" workshop, organized by the Quantum Communications Group of the **Instituto de Telecomunicações**. The event was developed within the scope of the **PTQCI Portuguese Quantum Communications Infrastructure project** and brought together **national and international key players** in the field of quantum technologies to discuss the implementation of the quantum communications network in its national and international aspects.

ABOUT THE PROJECT ptqci.pt

The Portuguese Quantum Communication Infrastructure (PTQCI) project is the first land segment of the European Quantum Communication Infrastructure (EuroQCI) in Portugal and is the first step towards the integration in the European infrastructure.

PTQCI should enable the deployment of highlysecure services based on Quantum KeyDistribution (QKD).

In this issue:

Quantum Communication Networks Workshop at University of Aveiro; Quantum Tech Day 2024: Quantum Computing; PTQCI presentation at the Naval School in Lisbon; Training Session on Quantum Computing by Eviden; Warpcom participated in the Jornada FCCN; Papers; Events; PTQCI Podcast and Communication Materials.

QUANTUM TECH DAY 2024: QUANTUM COMPUTING

The second edition of the Quantum Tech Day took place in **Aveiro**, at the **Instituto de Telecomunicações**, on **March 13, 2024**. The event was organized by the Quantum Communications Group, within the scope of the Portuguese Quantum Communications Infrastructure PTQCI project.

Ernesto Galvão from **INL International Iberian Nanotechnology Laboratory** presented on Photonics Quantum Computing, and **Professor Armando Nolasco Pinto** from the **Instituto de Telecomunicações** and **Universidade de Aveiro** discussed an engineering approach with MATLAB in Quantum Computing.



Training session on Quantum Computing at Quantum Tech Day 2024 with Ernesto Galvão from INL (on the left) and Professor Armando Nolasco Pinto from Instituto de Telecomunicações and Universidade de Aveiro (on the right) at IT Aveiro.



Catarina Bastos (Deimos) at the Naval School, Lisbon.

PTQCI PRESENTATION AT THE NAVAL SCHOOL IN LISBON

On **May 7**, **Catarina Bastos**, representing **Deimos Engenharia**, and **Paulo Santos**, from the **Gabinete Nacional de Segurança**, presented the Portuguese Quantum Communications Infrastructure - PTQCI project during the plenary session of the main **REPMUS** planning congress at the **Naval School** in Lisbon, Portugal.

REPMUS (Robotic Experimentation and Prototyping using Maritime Uncrewed Systems) is an annual **military exercise** organized and hosted by the Portuguese Navy and NATO with the participation of forces from **foreign military forces**, **universities**, and **tech companies**.

TRAINING SESSION ON QUANTUM COMPUTING BY EVIDEN

On **May 8**, members from the **Eviden** company, including **Andrés Bravo Montes**, **José Camacho**, and **João Nunes**, visited the Instituto de Telecomunicações to conduct a training session on "**Quantum Computing - Quantum Emulation with myQLM**", organized by the Quantum Communications Group of the Instituto de Telecomunicações - Aveiro.



Photo of the training session participants.

WARPCOM PARTICIPATED IN THE JORNADA FCCN

Bruno Gonçalves, representing Warpcom, participated in the Jornada FCCN in Funchal with a presentation titled "Getting Ready for Quantum Security". This event serves as an annual meeting point for all those interested in connectivity, computing, collaboration, knowledge, and security. The FCCN unit's conferences gather diverse communities of managers and users of advanced computing platforms, communication, and other digital services the FCCN provides. The event targets IT, library, documentation, and archive service managers from higher education institutions, decision-makers, and institutional leaders in these areas, and those responsible for scientific execution and research units.



Bruno Gonçalves (Warpcom) participated in the "Jornada FCCN in Funchal".

PAPERS

The paper "**Towards a hardware-in-the-loop quantum optical ground station simulator and testbed**" was presented in the IEEE International Conference on Space Optical Systems and Applications (ICSOS) and published on *IEEE Xplore*. doi: 10.1109/ICSOS59710.2023.10491227"

Congratulations to Manfred Niehus and co-authors João Castanheira Da Silva; João M. Carvalho; José Simão; António Serrador and Mário J.G.C. Mendes. Read the full article [here](#).

The paper "**Design and implementation of a polarization-encoding system for quantum key distribution**" was published in the *Journal of Optics and Photonics Research*.

Congratulations to Sara Mantey and co-authors Nuno Silva, Armando Nolasco Pinto, and Nelson J. Muga. Read the full article [here](#).

#1 PTQCI SUMMER SCHOOL QUANTUM COMMUNICATION & SPACE

SAVE THE DATE
[MORE INFO](#)

From **September 11th to 12th**, the **Instituto Superior Técnico (Pólo Oeiras)**, located at the **Taguspark - Lisbon**, will host the **PTQCI Summer School on Quantum Communication & Space**. This initiative is being developed within the scope of the PTQCI Portuguese Quantum Communication Infrastructure project.

The program is designed to empower university students and young professionals, providing cutting-edge insights into quantum technology and space exploration.

Additionally, plans are underway for a "**Winter School**" in **January/February 2025**, with a thematic focus complementary to the 2024 Summer School.

WORKSHOP #2

FREE-SPACE QUANTUM COMMUNICATIONS

SAVE THE DATE

[MORE INFO](#)

From **September 9th to 10th**, the **Instituto de Telecomunicações - Lisbon** will host the **second workshop** of the **PTQCI Portuguese Quantum Communication Infrastructure** project. The event, titled "Free-space Quantum Communications Workshop," will focus on the latest advancements and research in quantum communication.



PTQCI Podcast covers.

PTQCI PODCAST

The PTQCI podcast has been launched! On this podcast, you can find the **Quantum Tech Talks** series with **experts in the field** of Quantum Communications to talk about the Quantum Communication Infrastructures in Europe.

Stay tuned and subscribe for new episodes!

[Listen now on Spotify!](#)

INSTITUTIONAL VIDEO

The PTQCI institutional video succinctly outlines its objectives, milestones, and impact, aiming to engage stakeholders and generate support for advancing quantum communication infrastructure in Portugal. Through concise narration and compelling visuals, it highlights technological advancements, research collaborations, and societal benefits, fostering awareness and interest in the project's endeavors. [Watch the video!](#)



WORKSHOP VIDEO

Experience the highlights of the "Quantum Communications Network" workshop, featuring the best moments of the event held at the University of Aveiro in February.

[Watch the video!](#)

Meet Our Partners



"We coordinate the Portuguese Quality System and other regulatory qualification systems. In this project, we will provide a platform for the testing and development of a system that provides secure time transfers".
- Instituto Português da Qualidade



"Leveraging 20 years of space developments for the benefit of the future of secure communications."
- Omnidea



"We explore Optical ground stations that are at the forefront of technological innovation, facilitating the development of secure and efficient QKD between satellites in space and ground networks".
- Instituto Superior de Engenharia de Lisboa

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NEWSLETTER - JUNE, 2024



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