

A SHORT SELECTION OF EVENTS IN (almost) CRONOLOGICAL ORDER 2015-2026

10 Years Of Quantum

Press Release

EDUCATION /

In 2015, the first discussions took place on deepening the quantum field, and in the same period the first bachelor's/master's theses in quantum technologies were defended in the Computer Science Department of our university.

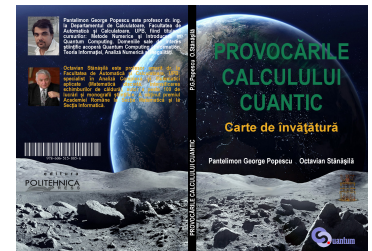
EDUCATION /

In 2017, **POLITEHNICA Bucharest introduced the first complete quantum computing course at national level - Introduction to Quantum Computing** - within the Computer Science Department of the Faculty of Automatic Control and Computer Science. [this course was also held for several years in parallel for the Faculty of Electronics and Telecommunications]



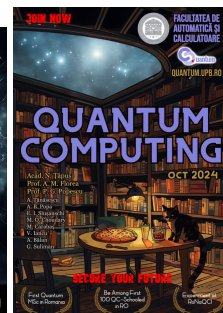
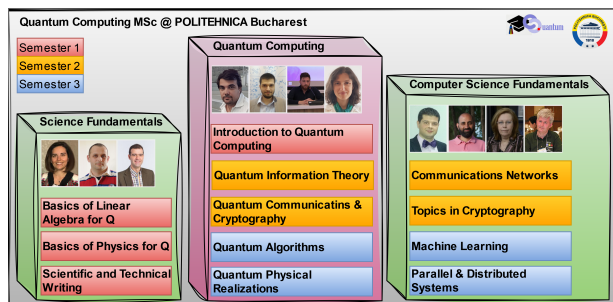
EDUCATION /

In 2019, **the first quantum computing textbook in Romania was published - The Challenges of Quantum Computing**, co-authored by the great Professor Octavian Stanasila. [PGPopescu, ONStanasila, Provocarile Calculului Cuantic (The Challenges of Quantum Computing), Ed. Politehnica Press, 2019, ISBN 978-606-515-885-6]



EDUCATION /

In 2022, ARACIS approved, and in 2023 POLITEHNICA Bucharest launched, **the first master's programme in Romania in Quantum Technologies - Quantum Computing MSc** - which was **the third in the world in Quantum Computing**, within a range of ~55 similar programmes in QT. [Quantum Technology Monitor - McKinsey & Company, April 2023]

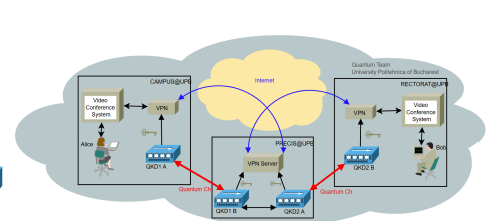
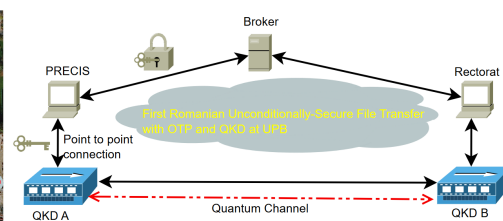
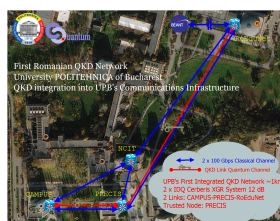


RESEARCH /

In 2022, the **Romanian National Quantum Communication Infrastructure - RoNaQCI** project, worth EUR 10 million and coordinated by POLITEHNICA Bucharest, received a **very strong review** from the European Commission: *"The successful implementation of the project will place Romania in a strong position in the area of quantum communication. Apart from the network deployment itself, a particularly valuable element is the staff development plan aimed especially at young specialists and network users. The proposal will ensure the sustainability of the development of quantum technologies in Romania and contribute to the reinforcement of the digital supply chain in the EU."* (EC review), and the project started on 1 January 2023.

INFRASTRUCTURE,
SOFTWARE /
POLITEHNICA

In January 2023, **the first Quantum Key Distribution (QKD) network in Romania was built**, fully integrated into the communication infrastructure of our university. Then, in June 2023, Romania's first **Unconditionally Secure File Transfer** and first **Video Conference over a Post-Quantum VPN** channel were launched, using cryptographic keys distributed quantum-mechanically through the QKD network of POLITEHNICA Bucharest.



In 2023, including through formal founding documents and dedicated launch events, **a national network of more than 18 educational and research centres, called Quantum Hubs, was created under the coordination of our university.** These include: ISS, UMC, UPT, ROSA, UCv, UBB, ITA, INCDFM, UB, UVT, UGAL, INCDTIM, TUIasi, UAIC, IFIN-HH, ULBS and UTCN; the signed founding documents refer to the National Centre for Quantum Technologies at **POLITEHNICA Bucharest.**



Data: 17/09/2023

Decizie de înființare

Prin prezenta se certifică înființarea unui centru educațional și de cercetare în domeniul tehnologiilor cuantice, ca parte dintr-un consorțiu național de centre, **ROSA Quantum HUB**, la Agenția Spațială Română, din București. ROSA Quantum HUB își va desfășura activitatea beneficiind de suportul centrului național de educație și de cercetare în domeniul tehnologiilor cuantice – **Romanian National Quantum Centre** din cadrul Universității Politehnice din București.

ROSA Quantum HUB face parte din rețeaua națională de centre educaționale și de cercetare în domeniul tehnologiilor cuantice dezvoltată de RoNaQCI – Romanian National Quantum Communication Infrastructure, proiect coordonat de Universitatea Politehnică din București.

Date contact: ROSA Quantum HUB
Adresă: Agenția Spațială Română, et. 6, Mendeleev 23-25, sector 1, București
Persoană de contact: Irina Petra Măncu
Email/Tel: irina.mancu@rosa.ro / +4021 31687722

Agenția Spațială Română



Universitatea Politehnică din București

Data: 16 Mai 2023

Eveniment de lansare UCV Quantum HUB

UCV Quantum HUB, de la Universitatea din Craiova, reprezintă un centru educațional și de cercetare în domeniul tehnologiilor cuantice. UCV Quantum HUB își va desfășura activitatea beneficiind de suportul centrului național de educație și de cercetare în domeniul tehnologiilor cuantice – **Romanian National Quantum Centre** din cadrul Universității Politehnice din București.

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Date de contact: UCV Quantum HUB
Adresă: Calea 95, 201000, Craiova, et. 3, Blvd. Decebal nr. 107, 300223, Craiova, RO
Persoană de contact: Prof. Dr. Lucian Barbu
Email/Tel: lucian.barbu@ucv.ro / 0744 222066

Detalii eveniment: Eveniment UCV Quantum HUB

Participanți: conf. Dr. Marius, Lt. Lucian Barbu, Profesor conf. Eugen Gheorghe, Profesor conf. Marius Marin, Profesor conf. Claudiu Popescu, Director de Departament, Lt. Marius Dinescu, Director de Departament, Lt. Gabriel Stănescu, conf. Costin Popescu, Lt. Eugen Dumitrescu, Lt. Claudiu Cerbulescu, Lt. Claudiu Marin, Lt. Marius Dinescu, conf. Irina Tudor



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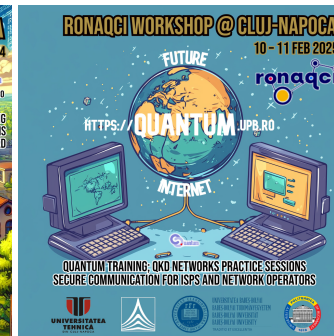


In December 2023, members of the quantum team at POLITEHNICA Bucharest received **the Gheorghe Cartianu Award, granted by the Romanian Academy for contributions in Quantum Computing.**

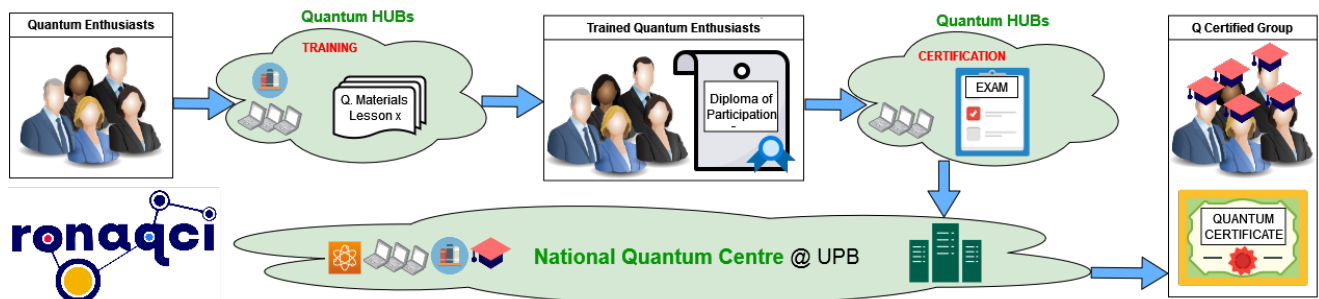


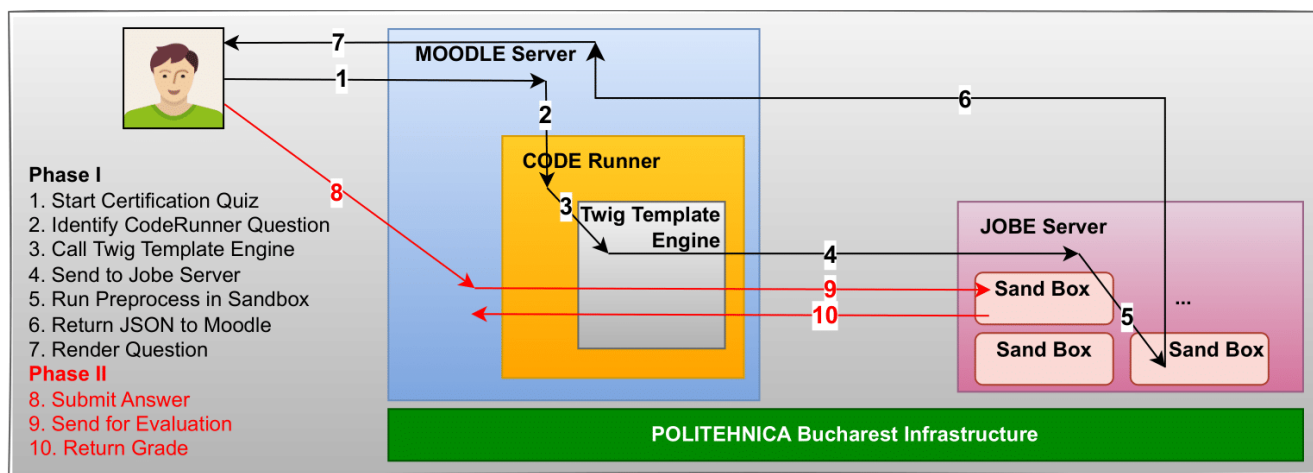
In the summer of 2024, Romania published the national strategy in the field of quantum technologies, **to which POLITEHNICA Bucharest contributed through decisive interventions.** [[National strategy in the field of quantum technologies for the period 2024-2029](#)]

During 2023-2025, **extensive training sessions in quantum technologies were organised** and, as a result, more than 1,600 users were trained in 13 national training sessions involving 42 instructors. More than 900 participation diplomas were awarded after a test that forms part of a certification system unique in the world. All of this took place **under the coordination and active involvement of our university.**



During 2024-2025, **POLITEHNICA Bucharest built and launched a complete and first-of-its-kind certification system in Basic Quantum Knowledge**, which allows users to be tested in several stages and, at the end, to obtain an electronic BQK certification containing a unique code stored in a database and later validated. Using this system, more than 350 *Certification of Completion - Training in BQK* certificates and only a few *Certification in BQK* certificates were awarded in Romania.





EDUCATION /
RoNaQCI

In 2024, the book **Basic Quantum Knowledge** was published in Color Magazine format, coordinated by POLITEHNICA Bucharest without a named author, and was distributed free of charge in Europe at all events attended. It was highly appreciated, especially because of the ease with which it presents certain difficult concepts in quantum technologies. [Basic Quantum Knowledge, Ed. Politehnica Press, 2024, ISBN: 978-606-9608-88-3]

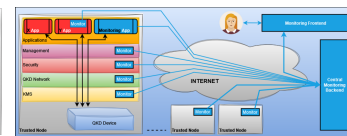
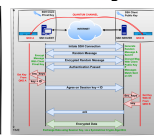
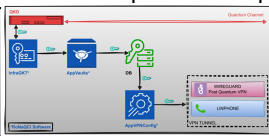
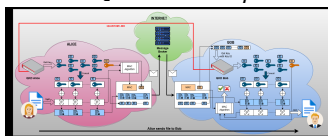


RESEARCH /

During 2018-2025, the quantum team at POLITEHNICA Bucharest published **important articles in quantum technologies**, including the series of articles on **Entanglement Distribution**, several of which were published in the Nature portfolio: [Optimal entanglement distribution within a multi-ring topology 2025](#); [Optimal and scalable entanglement distribution over crossbar quantum networks 2024](#); [Optimal quantum network decongestion strategies 2023](#); etc. We also mention the article that described, for the first time, the behaviour of large QKD networks - [Optimal key forwarding strategy in QKD behaviours 2024](#).

SOFTWARE /
Partial RoNaQCI

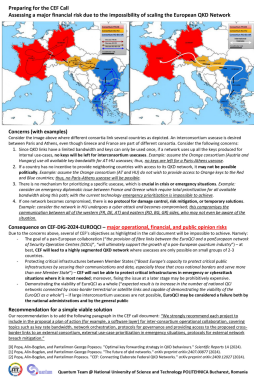
During 2024-2025, a series of *Quantum Software* tools were officially released as open source under the Apache 2.0 licence, signed by POLITEHNICA Bucharest and **made available to the consortia and countries in Europe involved in building the European Quantum Communication Infrastructure - EuroQCI**. We mention here the following: QKD Unconditionally-Secure File Transfer [Date: July 1st, 2024. License: Apache 2.0 (Open Source)]; QKD VPN [Date: July 1st, 2024. License: Apache 2.0 (Open Source)]; QKD Get Key Tool (QKD-GKT) [Date: July 1st, 2024. License: Apache 2.0 (Open Source)]; QKD Vault Key Aggregator [Date: October 31st, 2024. License: Apache 2.0 (Open Source)]; qSSH [Date: October 31st, 2024. License: Apache 2.0 (Open Source)]; QKD-MonDash [Date: January 1st, 2025. License: Apache 2.0 (Open Source)];



POLICY /

In spring 2025, the quantum team at POLITEHNICA Bucharest proposed an [international policy on EuroQCI scalability](#). **Romania's proposal was accepted by the EC, PETRUS and HADEA** and impacted more than 25 EU Member States and more than 19 consortia that applied to the [CEF call](#) - the second stage of EuroQCI. This Romanian intervention, signed by POLITEHNICA Bucharest and entitled **Preparing for the CEF call**, distilled into a one-page document, was discussed twice by more than 100 specialists from Europe, who publicly expressed their appreciation for it. In terms of impact, following this policy and the recommendations it contained, each international consortium included a task, groups of tasks, or even an entire work package dedicated to international collaboration among consortia in order to facilitate the scalability of EuroQCI.





Dear EuroQCI partners (in Ro),

Many of you will be preparing to be involved in proposals for the CEF call on cross-border connections. As you know, the deadline was fortunately aligned with CEF of last year. The Petrus team would like to give you the opportunity to exchange views, questions, and ideas on proposals for a dedicated PETRUS meeting on 28th of February at 13:00 CET.

Please register here when you want to join:

There are two main points to present/discuss at the meeting:

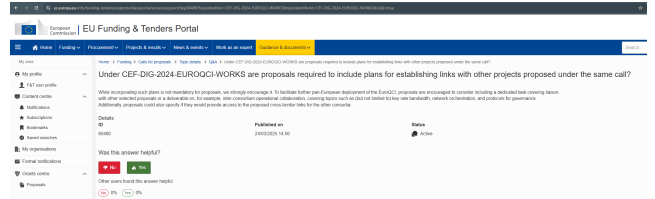


2. This is a proposal by the Romanian colleagues (and their and foreign partners) to have each project covered to support other projects if it comes to meeting of key between different CEF projects. This means that the following link should be included into each CEF project's "eligibility".

"We strongly recommend each project to include in the proposal a plan of action (for example, a software layer) for inter-connection operational collaboration, covering topics such as the use of bandwidth, network infrastructure, protocols for governance and providing access to the proposed cross-border links to be external consortium, external case-law prioritization in emergency situations, protocols for external network breach mitigation".

The full recommendation can be found here: [Recommendation to the CEF call](#). The document was also sent to the EC, which is favor of this. We at PETRUS also use that work on key exchange among project leaders is important, since only that can the full EuroQCI architecture be evaluated as a European task. We are happy to discuss and listen to your comments on this in the meeting.

We hope to see as many of you as possible.



EDUCATION,
RESEARCH,
INFRASTRUCTURE,
SOFTWARE /
RoNaQCI

In July 2025, with the major involvement of RoEduNet and under the coordination of POLITEHNICA Bucharest, the construction of Romania's Quantum Key Distribution network was completed, totalling more than 1,500 km. **Romania's terrestrial QKD network became the largest terrestrial network in EuroQCI.** On 8 August 2025, more than 12 applications were run in parallel on this network among the RoNaQCI partners, distributed across all regions of the country, marking a historic moment in quantum technologies, during which more than 2,400 cryptographic keys of 256 bits were exchanged via QKD. On 30 June, the RoNaQCI project ended, being among the first in the EU to be completed, while most countries requested a 6-12 month extension. Thus, through what it achieved, **Romania became a key point in quantum communications internationally.** The achievements of this journey are presented in numbers below:

1500+ Kms of QKD Links	36 QKD Links (20 City Links and 16 National Backbone Links)	1600+ Trained Users, Students, Academics and Professionals	30 Partners (Academia, Industry, Public Authorities)	6500+ Certification Infrastructure Lines of Code
13 Quantum Trainings	450+ Likes, Comments, Shares	130 Quantum Training Hours	10+ Scientific Publications	164 Certifications Awarded
15+ International Talks Given	1 Quantum Book Published	13 Open-Source Repositories	19 Quantum HUBs	42 Quantum Training Teachers
150+ Students at the Hackathon	6 QKD Metropolitan Networks	80+ Social Media Posts	7 National Workshops	19000+ Impressions on LinkedIn
900+ Diplomas of Participation Awarded	41 Mentors and Juries at the Quantum Hackathon	2000+ Messages Exchanged on Discord at the Hackathon	1 International Policy for EuroQCI Scalability	

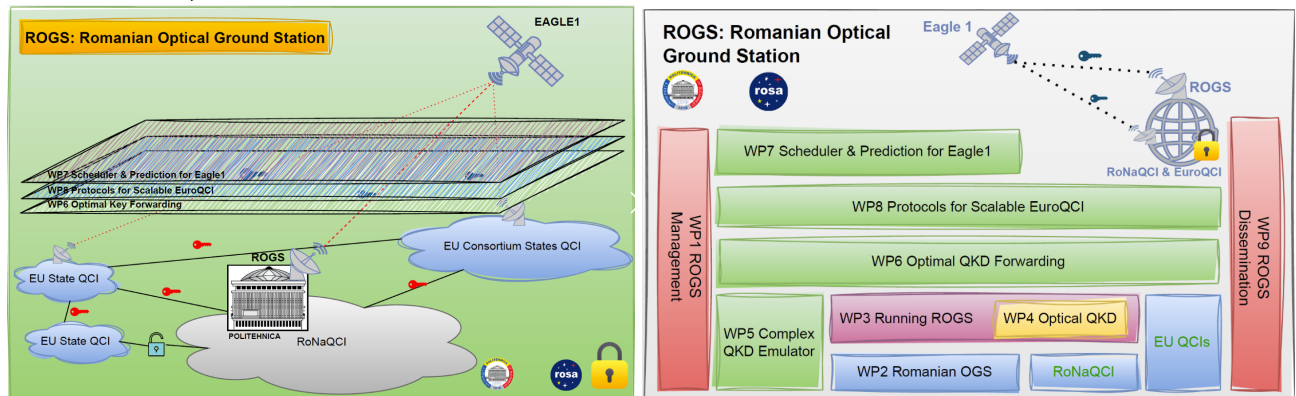
INFRASTRUCTURE
/
QRUSOE

Also in 2025, our team was accepted as the only foreign partner in QRUSOE, France's national project. From the first paragraph of the project abstract, we quote: *"The project is a 42-month strategic initiative supporting EU's vision of sovereign, secure and quantum-resilient communication infrastructure under the EuroQCI framework. 13 partners across France and Romania will develop two Quantum Ground Stations in France for space-based quantum communications compliant with the EuroQCI's space and terrestrial networks, supporting public-private ventures. ..."*

INFRASTRUCTURE,
SOFTWARE /
ROGS

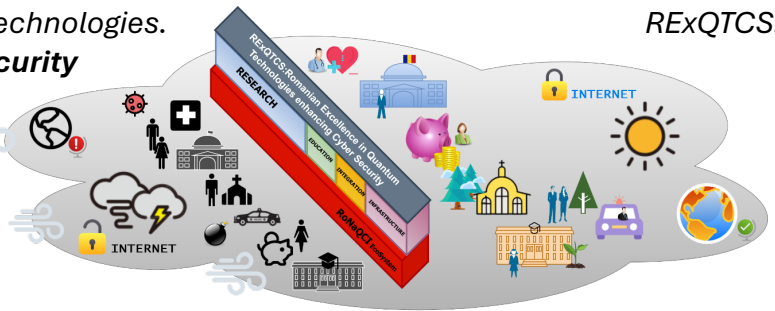
Also in 2025, the quantum team at POLITEHNICA Bucharest, as coordinator, won the **ROGS Romanian Optical Ground Station project**, worth EUR 7.5 million. Thus, in the next period, we will build **the first optical ground station in Romania** properly equipped to receive QKD-type signals and will therefore achieve Romania's first quantum satellite communication. From the

project abstract, we quote: “In the context of fast-paced developments in quantum computing, quantum key distribution is among the prioritized technologies and infrastructure at national, European, and international levels. EuroQCI, as the largest international initiative to date, has the ultimate goal of an efficient, scalable, pan-European network for secure communication, using both terrestrial and space segment connections. However, this is not an easy task: the lack of developed software for optimal key distribution, communication scheduling, and predictive allocation leads to inefficiencies throughout the network; the lack of protocols for breach mitigation leads to increased risk of security incidents; the lack of protocols for cross-consortium collaboration and policy engines leaves network governance and interoperability at risk; the early stage of QKD tech proves interconnectivity to be difficult. The objectives of the action are: 1) **deploying the first OGS in Romania compatible with Eagle1 and other future missions for EuroQCI**, integrating it with the Romanian national QKD network; and 2) developing software and protocols for optimal key forwarding, schedule and prediction, cross-consortium operational collaboration, and others. ...”



RESEARCH /
REXQTCS

Also in 2025, **POLITEHNICA Bucharest** won, as coordinator, a centre of excellence in quantum technologies and cybersecurity - **RExQTCS: Romanian Excellence in Quantum Technologies Enhancing Cybersecurity**. The project is worth EUR 20 million. We quote from the review received: “RExQTCS... is **well aligned with the domains of cybersecurity** for society and of strategic autonomy in digital technologies. **addresses critical cybersecurity challenges posed by the rapid advancement of quantum computing, positioning Romania as a key player in European quantum technology.**”



EDUCATION /

In mid-2025, **POLITEHNICA Bucharest** awarded **Romania's first 10 accredited diplomas in Quantum Technologies**, presented personally by the IBM CEO at our university. The diplomas contain a unique RSA-2048 encrypted message that can be decrypted with the help of a future quantum computer, following the *Harvest Now, Decrypt Later* strategy.



Here is an image representing our roadmap so far:

