QUANTERA

QuantERA Call 2023

Webinar for apllicants

02.03.2023

Start at 2PM (CEST)

Agenda

14:00	Welcome QuantERA in brief	Sylwia Kostka QuantERA Programme Coordinator
14:10	Research targeted	Konrad Banaszek QuantERA Scientific Coordinator
14:30	Main requirements Partner Search Tool Electronic Submission System Proposal preparation recommendations	Sergueï Fedortchenko Call Secretariat Leader
15:10	Evaluation and selection process	Watse Castelein Call Secretariat
15:30	Questions & Answers	All

Welcome

Switch your microphone OFF

Switch your camera OFF

Ask questions via chat

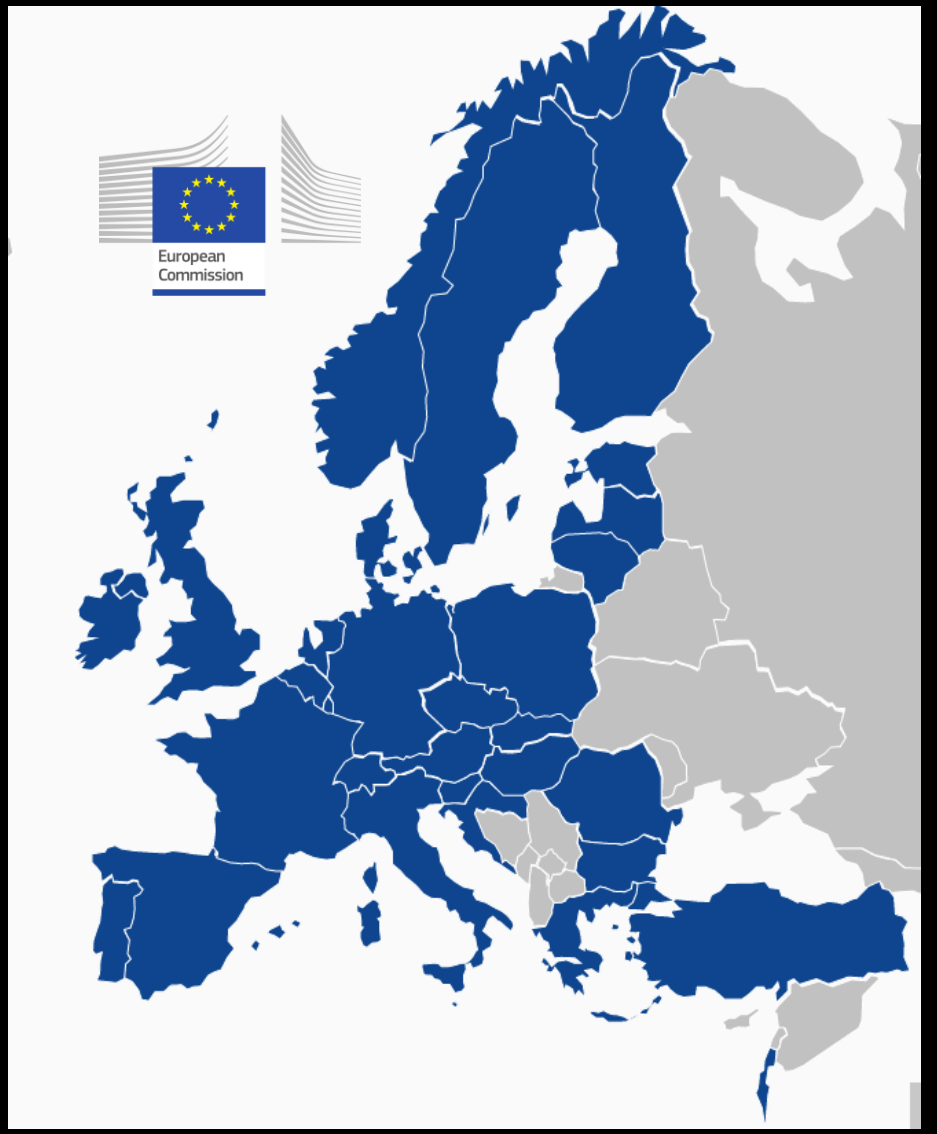
Supporting Quantum

QuantERA funds outstanding research ideas in Quantum Technologies by **funding excellent transnational R&I projects** through transnational calls for proposals**.**

https://quantera.eu/about/

Network of 41 Research Funders co-funded by EU

Austria	FFG, FWF
Belgium	FNRS, FWO
Bulgaria	BNSF
Croatia	HRZZ
Czechia	MEYS, TACR
Denmark	IFD
Estonia	ETAg
Finland	AKA
France	ANR
Germany	BMBF, DFG, VDI-TZ
Greece	GSRT
Hungary	NKFIH
Ireland	SFI
Israel	Inn. Auth.
Italy	CNR, INFN, MUR, NQSTI*
Latvia	LZP
Lithuania	LMT
Luxembourg	FNR
Malta	MFER
Netherlands	NWO, QDelta*
Norway	RCN
Poland	NCBR, NCN
Portugal	FCT
Romania	UEFISCDI
Slovakia	SAS
Slovenia	MIZS
Spain	AEI
Sweden	VR
Switzerland	SNSF
Turkey	TUBITAK
United Kingdom	UKRI



Quantum ideas are born in Europe

Strategic Advisory Board (SAB)

Alain Aspect
Institut d'Optique

Stefanie Barz
University of Stuttgart

Harry Burharm
University of Amsterdam CWI

Tommaso Calarco
Forschungscentrum Jülich

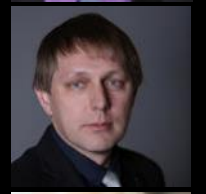
Eleni Diamanti
Sorbonne Université,
Paris Centre for Quantum Computing

Nicolas Gisin
University of Geneva

Jennifer Hastie
University of Strathclyde

Igor Jex
Czech Technical University in Prague

Sir Peter L. Knight
Imperial College



Josef Lazar
Institute of Scientific Instruments of the CAS

Gerd Leuchs
Max Planck Society

Yehuda Naveh
IBM Research Israel

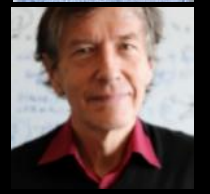
Saverio Pascazio
Università degli Studi di Bari

Thorsten Schumm
Vienna University of Technology

Andrew Shields
Toshiba Research Labs Europe

Jiri Vala
Maynooth University

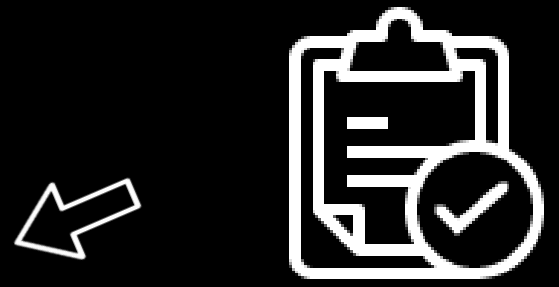
Dominik Zumbühl
University of Basel



Marek Żukowski
Uniwersytet Gdański

Activities

Providing Calls for Proposals
Funding R&I Projects



Spreading Research Excellence across Europe

Raising awareness on RRI Responsible Research & Innovation (Gender)

Mapping European **Public Policies in QT**

Previous Calls

€ 89 M

77
international
research projects

400
research teams

Co-funded Call 2017	Call 2019	Co-funded Call 2021
221 pre-proposals	85 full proposals	128 pre-proposals
26 funded projects	12 funded projects	39 funded projects

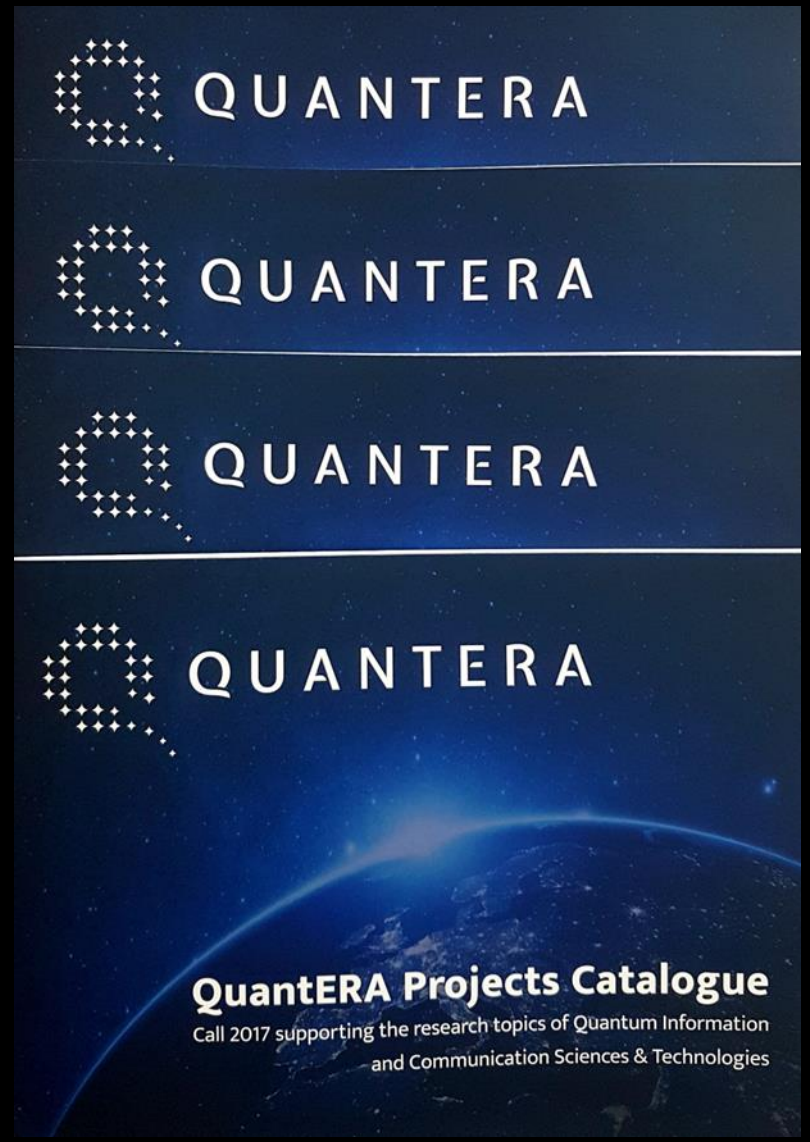
Funded Projects

Projects catalogues:

Call 2017
https://quantera.eu/project-catalogue/

Call 2019
https://quantera.eu/project-catalogue-2019/

Call 2021
https://quantera.eu/2021-projects-catalogue/



QUANTERA

ERA-NET Cofund in Quantum Technologies

CALL 2023

FOR TRANSNATIONAL RESEARCH PROPOSALS

TOPICS:

- Quantum Phenomena and Resources
- Applied Quantum Science

Research areas:

- Quantum communication
- Quantum simulation
- Quantum computation
- Quantum information sciences
- Quantum metrology sensing and imaging

Projects duration:

- 24 or 36 months

Timeline:

26th JANUARY 2023	2nd MARCH 2023	11th MAY 2023	DECEMBER 2023	JANUARY 2024
Call publication	Webinar	Deadline for proposals submission	Notification of accepted proposals	Start date for funded projects

Projects consortia:

Composed of **at least 3 partners**, eligible to receive funding from the QuantERA funders from 3 or more different countries participating in the Call.

Countries participating in the Call:

Austria, Belgium, Bulgaria, Canada, Croatia, Czechia, Denmark, Estonia, Finland, France, Germany, Hungary, Israel, Italy, Latvia, Lithuania, Luxembourg, Malta, Netherlands, Poland, Romania, Slovakia, Slovenia, Spain, Sweden, Switzerland, Turkey, United Kingdom.

This project has received funding from the European Union's Horizon 2020 Research and Innovation Programme under Grant Agreement no. 101017733.

Call Secretariat Leader:
French National Research Agency
Serguei.Fedortchenko@anr.fr

Programme Coordinator:
National Science Centre
quantera@ncn.gov.pl

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@quantERA_EU
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QuantERA Call 2023

Research Targeted

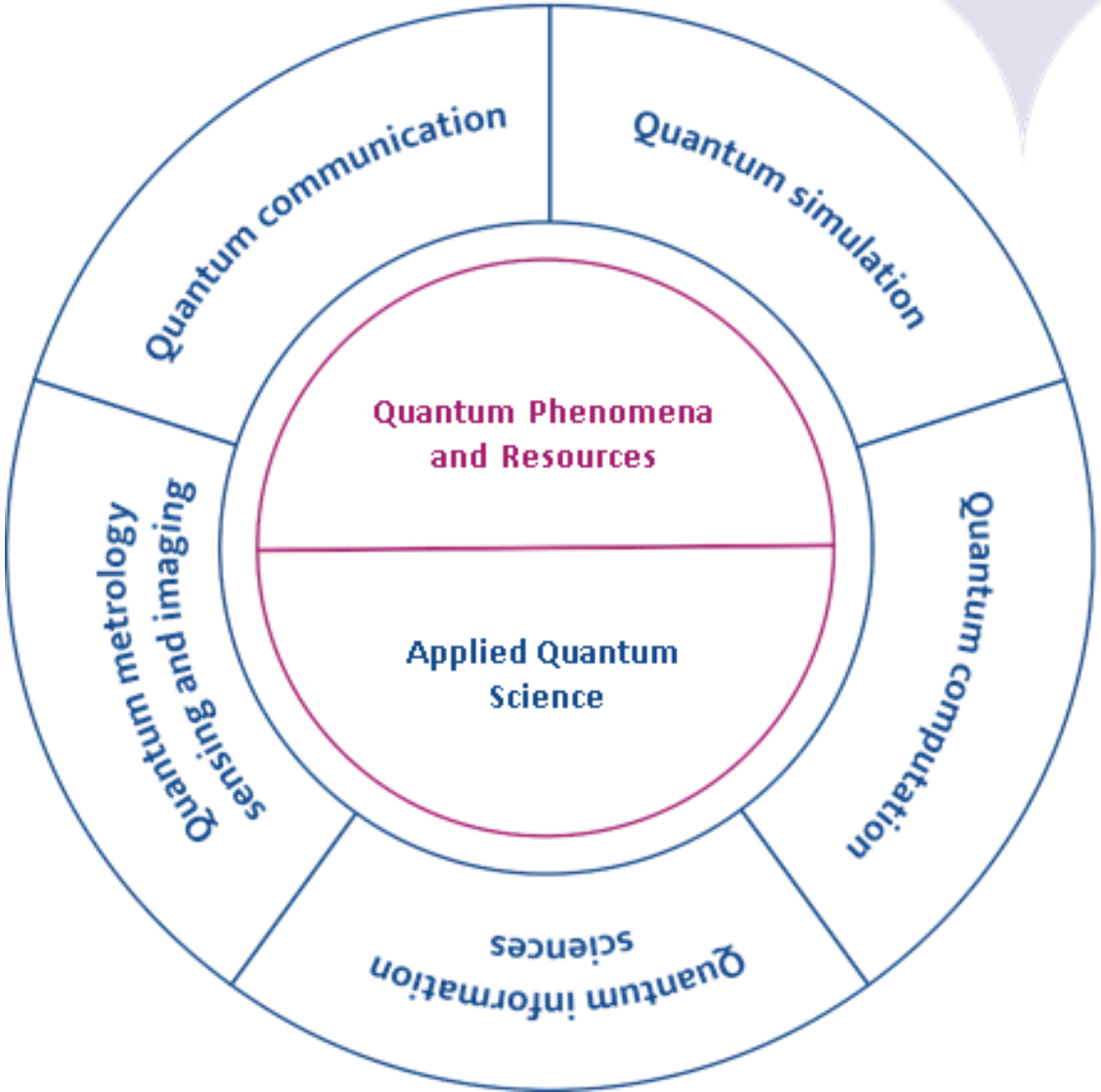
Research Targeted

Topics:

Quantum Phenomena and Resources (QPR)
Applied Quantum Science (AQS)

Targeted areas:

- Quantum communication
- Quantum simulation
- Quantum computation
- Quantum information sciences
- Quantum metrology sensing and imaging



Research Targeted - topics

Quantum Phenomena and Resources (QPR)

laying the foundations for the Quantum Technologies (QT) of the future

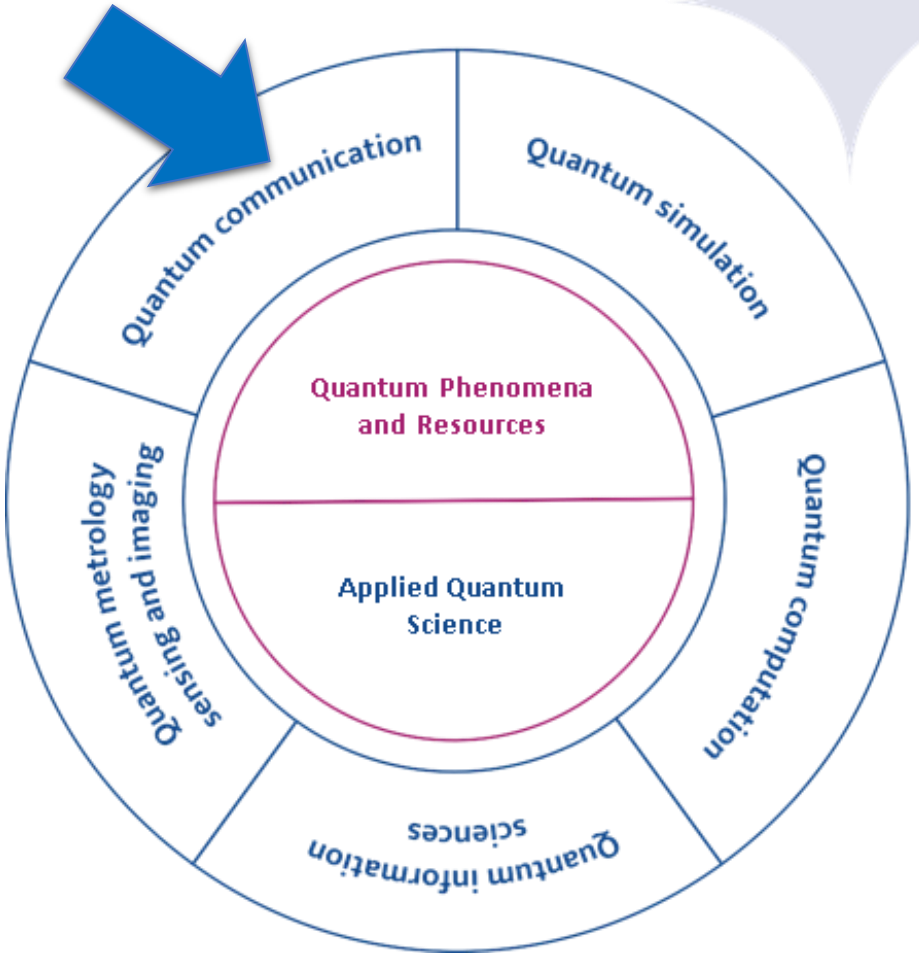
Applied Quantum Science (AQS)

translating QT concepts into technological applications

Target outcomes

Quantum communication

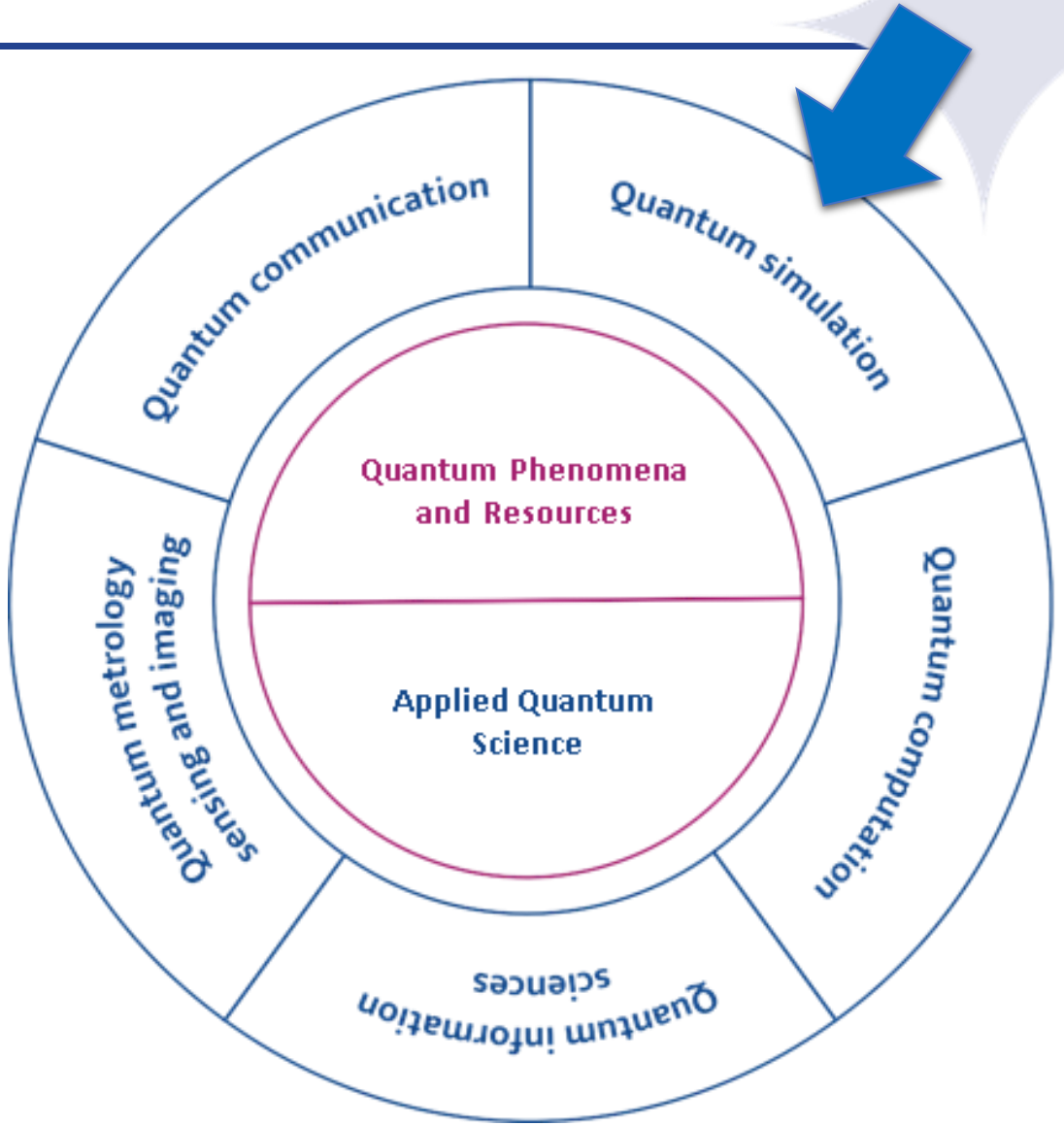
- Methods/tools/materials/strategies to deal with the issues of distance, reliability, efficiency, robustness and security in quantum communication.
- Novel protocols for multipartite quantum communication; quantum memory and quantum repeater concepts.
- Novel photonic sources for quantum information and quantum communication, coherent transduction of quantum states between different physical systems.
- Integrated quantum photonics.
- Quantum communication embedded in optical telecommunications systems.
- Other communication protocols with functionality enhanced by quantum effects.
- Methods for quantum communications in space, between satellites and Earth.



Target outcomes

Quantum simulation

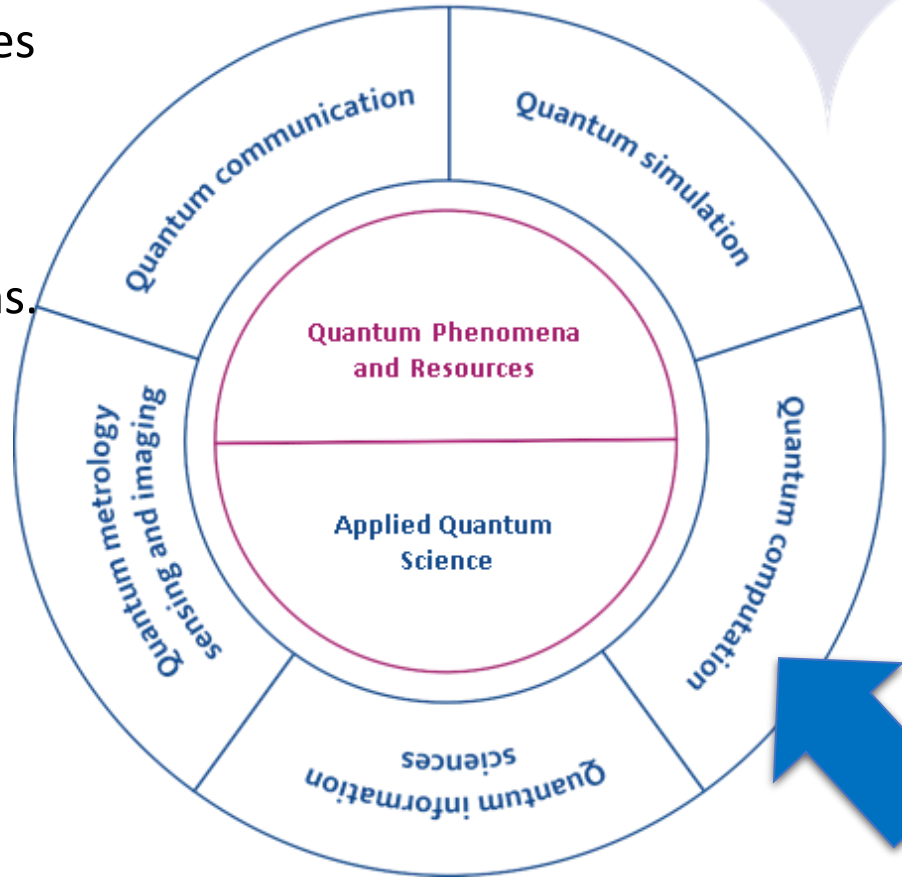
- Platforms and materials for quantum simulation.
- Development of new measurement and control techniques and of strategies for the verification of quantum simulations.
- Application of quantum simulations to condensed matter, chemistry, thermodynamics, biology, high-energy physics, quantum field theories, quantum gravity, cosmology and other fields.



Target outcomes

Quantum computation

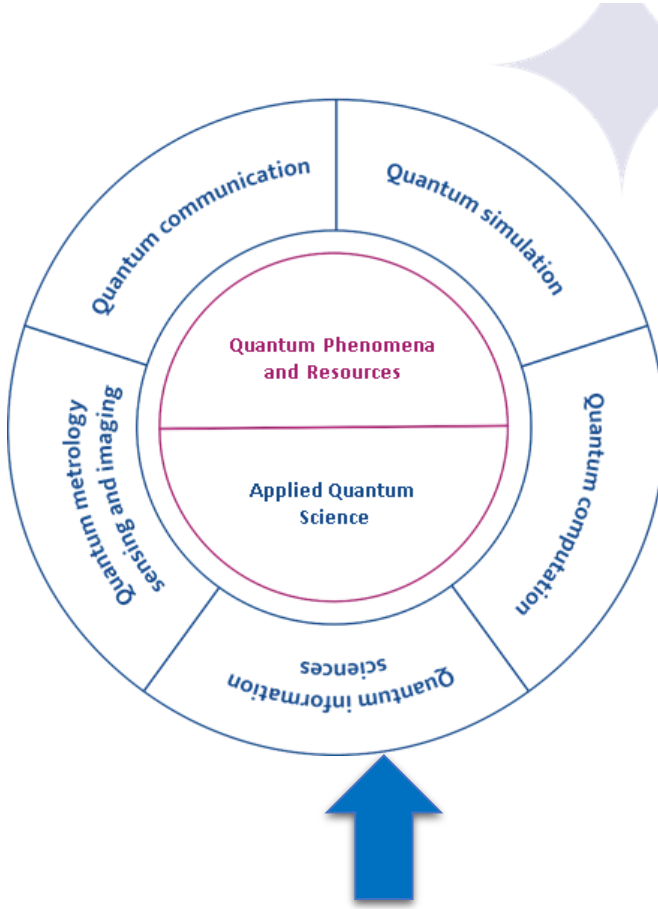
- Development of noisy intermediate-scale quantum platforms; devices to realise multiqubit algorithms; demonstration and optimisation of error correction codes; progress towards fault-tolerance.
- Interfaces between quantum computers and communication systems.
- Development of novel quantum algorithms and software stacks.
- Demonstration of quantum speed-up.
- New architectures and programming paradigms for quantum computation, including hybrid approaches.



Target outcomes

Quantum information sciences

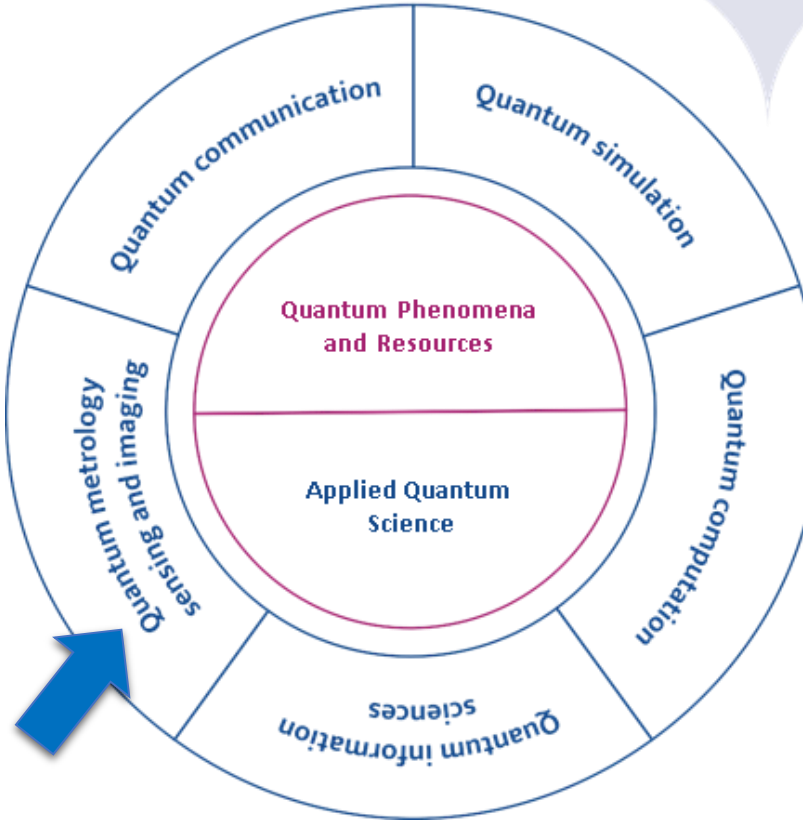
- Novel sources of non-classical states and methods to engineer such states.
- Development of device-independent quantum information processing.
- Methods for the reconstruction and estimation of complex quantum states or channels and certification of their properties.
- Development of resource theory for quantum information.
- Study of topological systems for quantum information purposes.
- Understanding and control of open quantum systems; development of methods to confine dynamics in controllable decoherence-free subspaces.
- Study of thermodynamic processes at the quantum scale.
- Novel ideas and applications in quantum science and technologies, based on e.g. superposition, interference and entanglement, as means to achieve new or radically enhanced functionalities.



Target outcomes

Quantum metrology sensing and imaging

- Use of quantum properties for time and frequency standards, light-based calibration and measurement, gravimetry, magnetometry, accelerometry, and other applications;
- Development of detection schemes that are optimised with respect to extracting relevant information from physical systems; novel solutions for quantum imaging and ranging;
- Implementation of micro- and nanoquantum sensors, for instance for quantum limited sensitivity in the measurement of magnetic fields at the nanoscale;
- Extension of the reach of quantum sensing and metrology to other fields of science including e.g. the prospects of offering new medical diagnostic tools.



Expected impacts

- Develop a deeper fundamental and practical understanding of systems and protocols/algorithms for manipulating and exploiting quantum information.
- Enhance the robustness and scalability of quantum information technologies in the presence of environmental decoherence, hence facilitating their real-world deployment.
- Develop reliable technologies for the different components of quantum architectures.
- Identify new opportunities and applications fostered through QT, and the possible ways to transfer these technologies from laboratories to industries.
- Enhance interdisciplinarity in crossing traditional boundaries between disciplines to enlarge the community involved in tackling these new challenges.
- Create a diverse and inclusive quantum community.
- Foster Responsible Research and Innovation approaches.
- Spread excellence throughout Europe by involving partners from the widening countries.
- Build leading innovation capacity across Europe by involvement of key actors that can make a difference in the future e.g. excellent early career researchers, ambitious high-tech SMEs or first-time participants.

QuantERA Call 2023

Main requirements for your proposal

Overview

- ✓ **Main requirements**
- ✓ **Partner Search Tool**
- ✓ **Electronic Submission System (ESS)**
- ✓ **Additional guidelines**

Call Secretariat

Call Secretariat Leader

ANR
Agence National de la Recherche
France

Support

NCN

National Science Centre
Poland

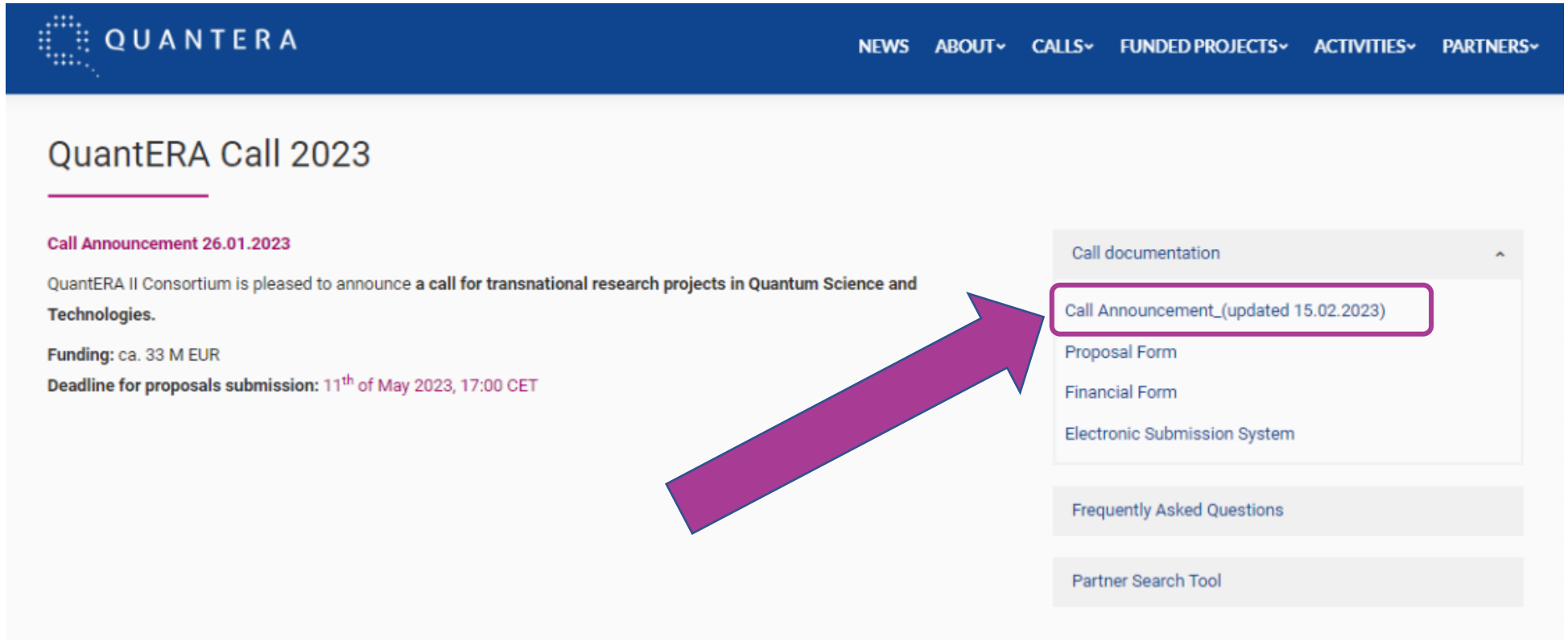
Evaluation

AEI

State Research Agency
Spain

Call Announcement

- Each one of these areas, as well as the list of expected impacts is detailed in the Call Announcement (see https://www.quantera.eu/).



Call documentation

Call Announcement:

https://quantera.eu/call-2023-announcement/

- **Call Announcement**

  Funding Agencies Eligibility Requirements!

- **Proposal Templates**

  Proposal form

  Financial form

Electronic Submission System (ESS)

Call Secretariat: Agence Nationale de la Recherche (ANR) France

Choosing a topic

- **The choice of the topic for a proposal is made by the proposal's consortium.**

- **The topic you choose should be the one you consider best describing the direction of your research.**

- Note that if the tasks of (a) partner(s) are not well in line with the consortium's chosen call topic (and closer to the other topic), the said partner(s) are strongly encouraged to contact their respective RFOs to check their eligibility.

Choosing a topic

- Once the topic is chosen, you will be asked to indicate which areas in Quantum Technologies are tackled by your proposal.
- There are five Quantum Technologies areas:
  - Quantum communication;
  - Quantum simulation;
  - Quantum computation;
  - Quantum information sciences;
  - Quantum metrology sensing and imaging.
- Each one of these areas, as well as the list of expected impacts is detailed in the Call Announcement (see https://www.quantera.eu/).

The Team

Project Coordinator:

- **One partner acts as the Coordinator for the consortium and is the single point of contact towards the QuantERA Call Secretariat**:
  - Receives and shares information
  - May not coordinate more than one proposal
  - Must be based in a country participating in the call
  - Must request funding.

For each project partner, one Principal Investigator (PI) is the point of contact at the national/regional level.

Application requirements

Formation of consortia:

- **At least 3 partners from 3 countries participating in the call**
  - *Industrial partners eligible for some funders (see call text for details)*
- Research should be focused on a **clearly defined objectives**
  - i.e. standard consortia size up to 6 partners
- Consortia should be **balanced**:
  - *Not more than 60% of the total requested funding may be requested by partners from one country*
  - *Not more than 40ù of the total requested funding may be requested y one partner*

Application requirements

Additional partners:

- Research groups from Europe whose funding organisations are not in the call may join a project consortium as long as they are able to secure their own funding
- These groups/institutions do not count for the 3/3 rule.

Application requirements

- Prior to submission, each PI has to consult with her/his funding organisation regarding eligibility issues:
  - Eligibility of the institution (university, academic institutions, industry etc.)
  - Position of the PI (e.g. permanent Staff etc.)
  - Eligible costs
- Some funding organisations (RFO) require additional national/regional forms
- **For questions related to national eligibility requirements, please contact your national/regional contact point!**

Additional recommendations

- **Make sure that your partners have checked their eligibility with the respective funding organisations**.
- Take into consideration national/regional budget constraints (see the table in the Call Announcement: https://quantera.eu/wp-content/uploads/QuantERA-Call-2023-Announcement-updated-15.02.2023-1.pdf).
- Do not hesitate to contact the QuantERA Call Secretariat and your national/regional contact points (their email addresses can be found on the call's webpage).
- Get used to the electronic submission system sufficiently in advance to prevent any technical risk.
- Length of the proposal: no more that 35 pages.

Annex II and III

QuantERA is committed towards Gender Equality (see Annex II) and Responsible Research and Innovation (see Annex III) – please check:

- Annex II: **QuantERA Gender Equality Statement**
- Annex III: **QuantERA Guidelines for Responsible Research and Innovation (RRI)**

Annex II: QuantERA Gender Equality Statement

Considering the impact that RFOs can have in the quantum field, physics institutes and the physics community are called:

To create a gender-sensitive environment and organisational culture

To create an equality standard regarding the management structure

To acknowledge that diversity is beneficial for science

To encourage all women PhDs in physics and in QTs, and provide them with the adequate career support

To acquaint STEM students with role models of women researchers in QTs

Initial measures on Gender Equality

Evaluation and Selection

“Create a diverse and inclusive quantum community” part of Expected Impacts

“The proposals demonstrating a fair gender representation and involving partners from the widening countries in their consortium should be prioritized” is part of selection criteria

Evaluation panel

With the aim of providing as much diversity as possible to the scientific evaluation, gender balance will be considered in the panel formation (Evaluation panels)

Gender indicators at projects level

The project should bear in mind gender balance and promote equal opportunities between women and men at all levels in the implementation of the research activities (Management of Projects)

Annex III: QuantERA Guidelines for Responsible Research and Innovation (RRI)

What is RRI?

Responsible Research and Innovation is an approach that anticipates and assesses **potential implications and societal expectations regarding research and innovation**, with the aim to foster the design of inclusive and sustainable research and innovation.

Responsible Research and Innovation implies that societal actors (researchers, citizens, policy makers, business, third sector organisations, etc.) work together during the whole research and innovation process in order **to better align both the process and its outcomes with the values, needs and expectations of society**.

Annex III: QuantERA Guidelines for Responsible Research and Innovation (RRI)

QuantERA and RRI

- Involve all partners and participants in ongoing considerations of RRI throughout the project life.
- Draft and regularly update your data management plan to ensure the sustainability of your research (consider the use of open access data storage platforms).
- Disseminate results/outcomes of your research on open access platforms (ex. arXiv, Github, etc.).
- Disseminate your research results/outcomes towards the general public (scientific outreach).
- Reflect on your research with regards to ethical issues, in particular with regards to privacy and data protection issues, IP protection, etc..
- Encourage the implication of early career researchers in your research projects.
- Provide equal opportunities for researchers of all genders (see annex 2).
- Involve relevant stakeholders in your project at the earliest possible stage and consider the involvement of RRI experts in your project implementation.

QuantERA Call 2023 – Information Webinar

Partner Search Tool and Electronic Submission System (ESS)

https://quantera.eu/

Partner Search Tool

To facilitate consortia building, a Partner Search Tool is provided

QuantERA Call 2023 Partner Search Tool

QUANTERA

This is a match-making section for **QuantERA Call 2023**.

To PUBLISH your offer of collaboration, complete the Expression of Interest form below. If you are an individual researcher or a representative of a research team, searching for a project to join, select: Partner looking for project. If you want to build a consortium around an existing project, select: Project looking for partner.

To FIND partners for your project ideas, search the database using keywords or action buttons below.

For any questions please contact: quantera@ncn.gov.pl

Search partner

Filter by:

Key words

Search partner »

Show all partners and projects »

Latest partners

Sorry, no results matching your search criteria were found.

Registration form

Type of Expression of Interest *

Call topics* (select one option)

- Quantum Phenomena and Resources
- Applied Quantum Science

Key words (max. 5) *

Brief description of your expertise / expertise you are looking for *

The Electronic Submission System (ESS)

- The links for the ESS are available here:

https://quantera.eu/call-2023-electronic-submission-system-3/

- Each topic, QPR and AQS, has a dedicated link.

- On the ESS, if you can't find your funder, this means that either there is no RFO from your country in this Call, or that you did not choose the right topic.

The Electronic Submission System (ESS)

- Make sure to read the **ESS guidelines**, that can be downloaded here in PDF format: https://quantera.eu/call-2023-electronic-submission-system-3/
- These guidelines contain screenshots to help you throughout the creation of your proposal on the ESS.
- While the creation of the proposal will not take long, please make sure to start preparing your proposal enough in advance on the ESS.
- **As the Coordinator you have to create the proposal first, and then your partners can log in, check and update information.**

QuantERA Call 2023 Webinar

Evaluation and Selection Process

https://quantera.eu/

Call 2023 Evaluation Timeline

Quantum Science and Technologies

Topics:

- **Quantum Phenomena and Resources (QPR)**
- **Applied Quantum Science (AQS)**

Call 2023 Announcement 26.01.2023

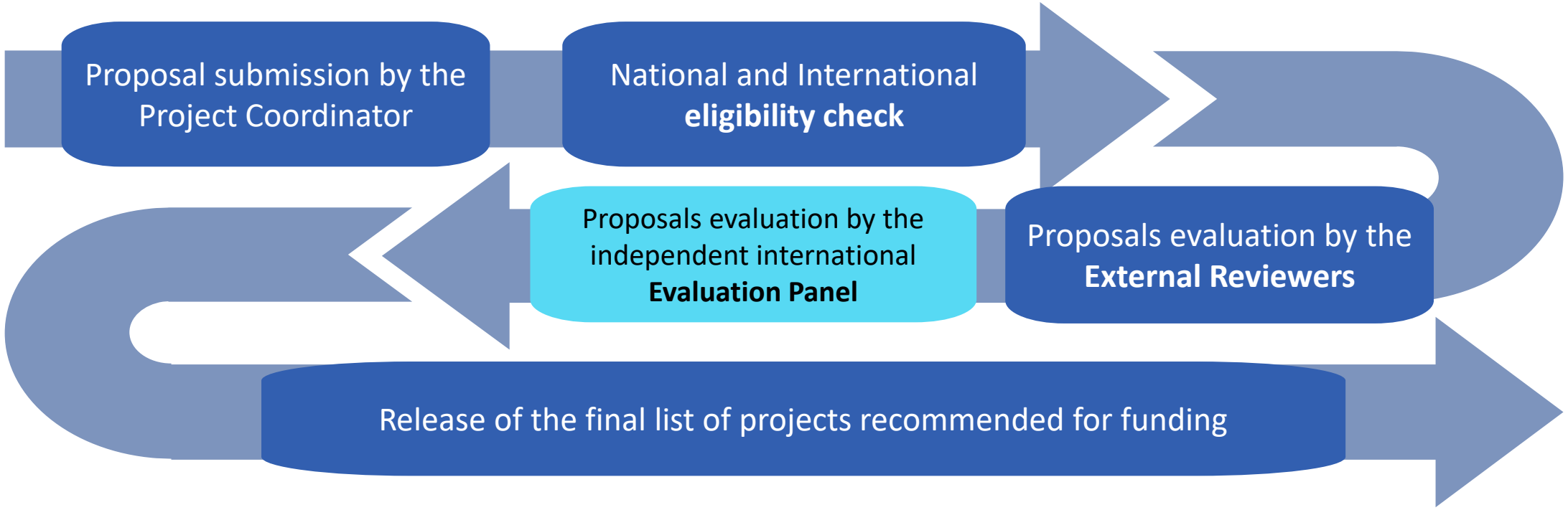
Proposals Submission Deadline 11.05.2023

Ranking List Published 12.2023

Project start January 2024

Submission — **Evaluation** — **Results**

Call 2023 Evaluation process



WHO will evaluate your proposal?

- **Evaluation Panels (EP)** are composed of international experts in Quantum
- Each topic, QPR and AQS, has a dedicated EP
- Composition of the EP is prepared by the Call Secretariat and approved by QuantERA partners in the Call
  - Scientists participating in the proposals cannot be members of the EP
- **Each proposal will be evaluated by at least 2 EP members**
  - External reviewers– at least 2 for each proposal
- **Evaluation panel is established for each topic:**

→ 2 separate EP evaluate proposals → Thus 2 ranking lists are elaborated

HOW will your proposal be evaluated?

Evaluation criteria – for full description see Call 2023 Announcement

- **Excellence**

  weight in QPR: 50%; weight in AQS: 25%

- **Impact**

  weight in QPR: 25%; weight in AQS: 50%

- **Quality and efficiency of the implementation**

  weight in QPR: 25%; weight in AQS: 25%

HOW will your proposal be evaluated?

0 The proposal fails to address the criterion or cannot be assessed due to missing or incomplete information (unless the result of an 'obvious clerical error').

1 Poor. The criterion is inadequately addressed, or there are serious inherent weaknesses.

2 Fair. The proposal broadly addresses the criterion, but there are significant weaknesses.

3 Good. The proposal addresses the criterion well, but with a number of shortcomings.

4 Very good. The proposal addresses the criterion very well, but with a small number of shortcomings.

5 Excellent. The proposal successfully addresses all relevant aspects of the criterion, any shortcomings are minor.

The eligible proposals recommended by the EPs are those proposals that reach a score of 3 in each of the three criteria used for the evaluation

Selection Criteria

The selection decision of the proposals to be recommended for funding to the RFOs is based on both ranking lists. When two or more proposals reach equal total scores, the following additional selection criteria will be applied:

- **The output of the call, i.e. the overall funding, should be maximised**
- **The success rates of both topics should be comparable**
- **If possible, each funding organisation should fund at least one proposal**
- **The proposals demonstrating a fair gender representation and involving partners from widening countries in their consortium should be prioritised (see Annex on QuantERA II Gender Equality Statement)**

WHICH feedback you will receive

- **Project Coordinator is the contact point for the Call Secretariat**
- **Call Secretariat informs Project Coordinators about final status of their project proposals, i. e. „recommended“ or „not recommended for funding“**
- **Consensus reports are sent to the Project Coordinator**
- **Consequently reports are distributed to all partners by Project Coordinator**
- **List of projects recommended for funding is published on QuantERA webpage**
- **If the proposal is recommended for funding, contractual phase is launched with the respective funding organisation**

Apply as an evaluator

QUANTERA

NEWS ABOUT CALLS FUNDED PROJECTS ACTIVITIES PARTNERS

Apply as an evaluator

To apply as evaluator for QuantERA Call 2023, please complete the form below.

Please note:

- Panel members cannot be part of a proposal submitted to the call topic of the panel.
- Within QuantERA, fundamental principles of good research practice and peer-review are essential for research integrity.
- QuantERA does not offer any financial compensation for the reviews.

As a panel member you would be called upon to:

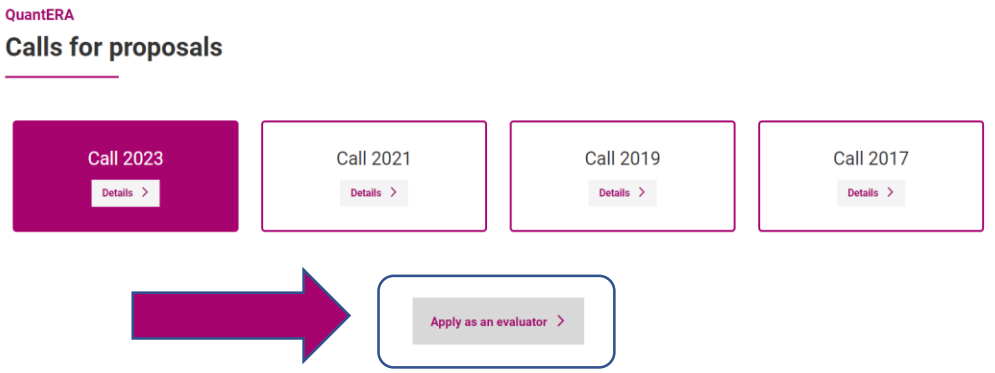
– Attend the panel meeting;

– Act as rapporteur or co-rapporteur for a few proposals: Validation of conflicts of interest and assignments, evaluation and ranking, suggestions of external experts for proposals, establishment of the ranking list,finalisation of consensus reports during the panel meeting.

As an external expert you will be called upon to:

– Evaluate one or more proposals.

Contact: quantera@ncn.gov.pl



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QuantERA Call 2023 – Information Webinar

Q&A

https://quantera.eu/

Frequently Asked Questions (FAQ)

- **The FAQ contains answers to questions that have already been asked. The list of questions could be increased in the coming weeks as we receive more questions.**
- **Available here: https://quantera.eu/call-2023-faq-for-applicants/**
- **Examples of questions:**
  - **Can a partner, from a country not invlolved in the call, participate in a proposal?**
  - **Are multiple submissions allowed, within the same topic or across topics?**
- **Note: if your question involves rules for your country specifically, please contact your Research Funding Organisation (RFO).**

QUANTERA

ERA-NET Cofund in Quantum Technologies

Call Information
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Programme Coordination
National Science Centre (NCN), Poland
Coordination Office: quantera@ncn.gov.pl

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@quantERA_EU

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