BUSINESS FINLAND

Quantum Computing Campaign's research call for universities and research institutes for 2024

Background

There is currently fierce international competition in building quantum computers and there are still many competing basic technologies. Quantum computing could open opportunities for mankind to solve many major sustainability problems (fossil-free energy or materials, logistics optimization, new and faster to develop pharmaceuticals etc.). The first companies to produce quantum-based solutions are also likely to be able to take markets from other players in other sectors. A vibrant ecosystem that develops the whole quantum computing technology stack has already emerged in Finland.

Business Finland's Quantum Computing campaign accelerates the growth and internationalization of the Finnish quantum ecosystem, in particular by supporting the development and deployment of the necessary quantum software stack, as well as company experiments and demonstrations to solve significant problems through quantum computing.

Goals

The focus of this research funding call is to produce new knowledge and know-how in the field of quantum computing software in order to create new innovations. This can be achieved e.g. with generative AI, by generating services that support the use of new knowledge, and by seamlessly combining classical computing and quantum computing, i.e. hybrid computing. Since we are still working with a lower levels of quantum software stack, the development and optimization of the hardware and software interface is also one possible area of research. Research that promotes the solution of significant problems in Finnish companies through quantum/hybrid computation and activates companies to participate in research work is also welcome.

Projects

Since the quantum computing sector is still at a very early stage, we do not yet believe that there will be many Co-Innovation projects, but the proposed research projects must, nevertheless, activate and encourage companies to join in and experiment. The idea proposal must describe not only what is being researched, but also how to get companies to participate, how to validate the research results together with the companies, and/or how the project to be funded generates pilot and Proof-Of-Concept projects around it. Potential companies to be activated and companies wishing to join the project steering group must be mentioned in the application.

Requirements

The Quantum Computing campaign requires that the research projects are carried out in close cooperation with companies, the means of cooperation and activation are described in the call of intent, and representatives of several user companies participate in the steering groups. Companies must participate in funding public research with a share of at least 10 percent in Co-Research projects.

In Co-Innovation projects, companies must participate in the joint project with their own R&D projects. At least three company R&D projects alongside public research; two business projects funded by Business Finland and one self-financed R&D project.

After the idea phase, in the actual application call, Co-Research, Co-Creation or Co-Innovation funding services are used and their general funding criteria and levels are applied. Exceptionally, the duration of the projects funded in this call is limited to two years. Read more about the funding services:

https://www.businessfinland.fi/en/for-finnish-customers/services/funding/cooperation-between-companies-and-research-organizations/co-research

https://www.businessfinland.fi/en/for-finnish-customers/services/funding/cooperation-between-companies-and-research-organizations/co-creation

https://www.businessfinland.fi/en/for-finnish-customers/services/funding/cooperation-between-companies-and-research-organizations/co-innovation

Selection criteria for campaign applications:

1. Project compatibility with a focus area of the call for ideas
2. Credibility and feasibility of the applicant(s) and the draft plan
3. Potential business benefits of the research results for Finnish companies in the long run
4. Engagement and interest/commitment of enterprises

Schedule and process for the call for ideas

- The call for ideas will be opened on October 17th, 2023.
- The information session will be organized on October 24th, 2023 in Teams. Registration: https://businessfinlandmarketing.microsoftcrmportals.com/event/registration?id=Aiehaun_infotilaisuus4101865970
- Ideas will be presented to companies and other researchers on November 21st, 2023 in G Livelab in Tampere. Registration: https://www.businessfinland.fi/en/whats-new/events/2023/quantum-computing-co-research-learnings-and-new-ideas
- Applications, i.e. **short descriptions of the project idea, are requested to be submitted by December 5th, 2023** to the Business Finland record office with case id **BFRK/4/35/2022.** Applicants must use the application form set out in Appendix 1. The maximum length of the applications is 3 pages.
- The Business Finland evaluation panel scores and ranks the applications, gives applicants feedback on the application and informs the applicant about whether or not to submit an actual funding application.
- **Final funding applications must be submitted by January 16th**, 2024 through Business Finland's online service

- Business Finland estimates that 4 MEUR will be allocated for this application call.

How to submit your application?

Ideas/applications of a maximum of 3 pages drawn up in accordance with the template and titles provided in Appendix 1 must be sent by e-mail to kirjaamo@businessfinland.fi or by using a secure connection to https://asiointi.businessfinland.fi/suojaposti by December 5th, 2023.

When sending the application, the following should be taken into account:

The applicant's name and the case ID must be indicated clearly in the subject field of the email: 'APPLICANT ORGANIZATION: Quantum Computing campaign Call for Ideas, Title of Idea, **BFRK/4/35/2022'**

The maximum size of the email message, including attachments, is 9 MB. The files can be compressed (Winzip). The files should be submitted primarily as .pdf and .tif documents. The files can also be submitted as .rtf files or .doc and .docx files (Word), .xls and .xlsx files (Excel) and .ppt and .pptx files (PowerPoint). When using email, the idea application is deemed to have been received by Business Finland once the message(s) and attachments are available in a readable format in the email account of the record office at Business Finland.

Applications can also be submitted by mail or in a closed envelope to the reception desk at Business Finland:

> Business Finland/record office
> P.O. Box 69 (Porkkalankatu 1)
> 00101 Helsinki

The projects selected as candidates will submit the actual funding applications through the Business Finland electronic application system. More detailed instructions will be provided to these applicants at a later stage.

Further information

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www.businessfinland.fi
tel. +358 29 50 55000
kirjaamo@businessfinland.fi

Innovation Funding Agency Business Finland
P.O.Box 69, FI-00101,
Helsinki, Finland
Business ID 0512696-4

Business Finland Oy
P.O.Box 358, FI-00181
Helsinki, Finland
Business ID 2725690-3

APPENDIX 1: Compulsory structure of applications proposing idea

COVER PAGE

Project name:	
Name of the primary applicant organization:	
Other participants (in the case of a joint project):	
Contact details of the contact person (name, phone, e-mail):	
Project budget (preliminary estimate of the total costs of all project participants):	
Funding applied for from Business Finland (preliminary estimate of BF funding contribution, information on whether a loan or grant is being applied for):	

1. Need: What need does the idea meet/what problem does it solve?
2. Benefits: What kind of results with international novelty value does the research create for Finnish companies? How does this problem-solving promote the business of Finnish companies in the long term?
3. Solution: How is the matter resolved, what is being researched/developed, by what means and within what timescale?
4. Competition: What competing solutions can be found? What alternatives do we have today?
5. Participation of enterprises: How will companies participate in the research, what role would companies play in it and what projects could be created by them, either during or after the project? What are the potential participating companies for the project and the steering group?