

Call for Ideas: Quantum Infrastructures

Call for 2-page ideas on quantum infrastructure developments with a national and industrial relevance

By the Swiss Quantum Commission (SQC)

November 27, 2024

1. Goals

The Swiss Quantum Initiative (SQI) has been set up to further strengthen the leading position of Switzerland in the field of quantum research, technology and application. As part of the SQI, this Call for Ideas aims at gathering ideas and conceptual proposals (“Ideas”) from the Swiss and international research, innovation and industry communities. It is part of the ongoing dialogue of the SQC with the quantum research and innovation communities. At this point, it is not linked to any specific funding opportunity or instrument. Input from this call will be used towards the development of strategies for extended or new infrastructures in Switzerland and to shape future SQI funding instruments.

2. Background and scope

Quantum technologies represent a groundbreaking frontier that promises to revolutionize computing, communication, sensing, and more. To harness the full potential of quantum capabilities, we seek your expertise, creativity, and vision to help shape the future of Switzerland’s quantum infrastructure.

For this Call, infrastructures are understood to be facilities, resources and services with a national and industrial relevance, that are established specifically for research or innovation purposes and are made available on a medium- or long-term basis. They are not used exclusively by individuals or groups, but are in principle open to a specialist community.

We invite Ideas related to the creation and expansion of such infrastructures in Switzerland, concerning the following topic areas: quantum communication, quantum computation, quantum simulation, quantum sensing and quantum metrology. Ideas in connection with the following related fields are also highly welcome: materials for quantum devices, control hardware, quantum theory, computer sciences.

3. Submission guidelines

Each submitted Idea should

- be a maximum of 2 pages in length,
- include a brief overview of the concept, expected outcome and the feasibility of implementation,
- highlight anticipated collaborations and partnerships,

- indicate, as a rough estimate, total implementation costs and expected public funding in CHF and
- include the name and affiliation of the coordinator of the Idea as the point of contact for the SQI and, if applicable, names and affiliations of further authors.

By default, the SQC will treat all submissions as confidential. Participants are asked to indicate whether their Ideas may be shared for discussion with other members of the community. The submission of multiple Ideas per participant is possible.

4. Screening process

The SQC, supported by the SQI office will screen submitted Ideas with a view on

- scientific and technological merit,
- level of innovation,
- value creation for the economy and for society and
- feasibility of implementing the Idea.

On this basis, the SQC will decide which Ideas are short-listed for further structuring and discussions in 2024. The SQC plans to conduct working meetings to review and elaborate selected Ideas with participants, either individually or in round-table settings.

5. Timeline

The following timeline is foreseen for this Call:

- Call for Ideas launch: November 27, 2023
- Submission Deadline: January 21, 2024. This is a soft deadline, later ideas will also be welcome, though might be processed in a second phase.
- Announcement of short-listed Ideas: March 29, 2024
- Working meetings with selected participants and SQC summary: up to end of 2024 (first decisions might be taken earlier).

6. How to submit

Please submit your 2-pager Ideas in pdf format by email to quantum@scnat.ch, preferably by January 21, 2024 with the subject title "SQI infrastructure call for ideas 2024".