Open Quantum Institute operations kick off at CERN, with the continued support from GESDA and UBS

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"GESDA is proud to launch today the pilot phase of the Open Quantum Institute, now part of CERN. It is a global platform for the application of solutions generated by quantum computers, one of the main objectives of which is to accelerate the achievement of the United Nations' Sustainable Development Goals," said Peter Brabeck-Letmathe, the Chairman of the Geneva Science and Diplomacy Anticipator (GESDA) Foundation at the ceremony marking the official handover to CERN of the OQI.

This GESDA born initiative is now hosted at CERN and is supported by UBS. Through its engagement, UBS helps Switzerland be a globally relevant player in quantum computing and supports the country's first-class higher education institutions, while staying close to research at the cutting edge of technological development.

This set up will enable the OQI to ramp up, find its cruising speed and gain critical mass. The official ceremony for the operational launch of the OQI, which took place at the CERN Science Gateway, was preceded by workshops of the OQI partners to mature the roadmap of the OQI for the initial 3 years pilot implementation phase.

"We are proud to be supporting the coming together of scientific research, business, and government for the common good. New technologies have an increasingly vital role to play in developing solutions to many of the big issues that society faces. The use of quantum computing to help achieve the UN Sustainable Development Goals marks an important step on the road to a more sustainable future," said Christian Bluhm, Group Chief Risk Officer at UBS.

CERN is the ideal place to develop the OQI

"CERN offers ideal conditions for the development of the OQI, and my hope is that this initiative will not only be a success, but also a model of what scientific diplomacy can do to promote concrete projects of benefit to humanity, says Fabiola Gianotti, CERN Director-General. "During the pilot phase, the OQI will benefit from CERN's experience in deploying scientific and technological progress to the benefit of society. We look forward to working with GESDA and other partners from academia, industry and government to ensure that quantum computing is accessible to all, including underserved regions of the world."

Why is CERN the ideal host institution for the OQI?

- Because the aim of the OQI, shared by GESDA and CERN, is to make quantum technology available, in an open and transparent way, to as many people and countries as possible.
- Because the OQI will also be an instrument for training and education, and CERN, which regularly trains and coaches around 4,500 scientists, engineers and technicians from all over the world, has a wealth of experience in this field.
- Because CERN works in a global, international environment of over 17,000 people, and has a thorough understanding of the mechanisms and procedures required to bring major projects to fruition.

More than 180 experts, 40 partner organizations from the public and private sectors and 20 countries took part, under GESDA's impetus, in the incubation of the OQI. Around 150 of them, present at CERN for the operational launch, took part in various workshops and focused their attention on what should make the OQI's strength and difference, namely :

- Rapidly implement solutions that use the potential of quantum computing to achieve the UN's Sustainable Development Goals (SDGs).
- Provide global, inclusive and equitable access to a pool of public and private quantum computers and simulators available via the cloud.
- Develop educational tools to enable everyone in the world to contribute to the development of quantum computing and make the most of the technology.
- Provide a neutral forum to help shape multilateral governance of quantum computing for the SDGs.

Quantum Use Cases to Accelerate SDGs' Implementation

In concrete terms, the partners are convinced that the Open Quantum Institute, thanks to quantum computing simulations, will be able, for example, to contribute to the reduction of carbon dioxide (CO2) in the atmosphere by improving the catalytic process responsible for fixing carbon to the surface of materials. This will contribute to achieving SDG 13, which calls for the fight against climate change.

Another example: antibiotic resistance is considered by the World Health Organization (WHO) to be one of the ten most serious threats to public health. Experts believe that quantum computing solutions will enable resistance patterns to be predicted more quickly and accurately, and new, less resistant chemical compounds to be identified on more targeted bacteria. This is tantamount to improving people's health and well-being, which is the aim of Sustainable Development Goal 3 (health and well-being).

This project to create an OQI is a perfect illustration of GESDA's way of working, which is to anticipate technologies that could change the world, and to look for solutions to implement them for the benefit of humanity. Already in 2021, GESDA's scientific community has put the spotlight on the potential of quantum technology. GESDA has decided to make this a priority and, at the 2023 summit, announced the creation of an Open Quantum Institute after a year of incubation work. CERN, which contributed to the entire incubation phase, is now taking over responsibility for the project during its pilot phase, with continued support of GESDA, UBS and all the engaged OQI community.

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About the Geneva Science and Diplomacy Anticipator Foundation (GESDA)

An independent non-profit foundation under Swiss law and a private-public partnership with the Swiss and Geneva authorities, GESDA was created in 2019 to strengthen the impact and innovation capacity of the international community through science and diplomacy anticipation.

For all questions and interview requests, please contact:

Jean-Marc Crevoisier, Director of Communication and Marketing of the GESDA Foundation + 41 79 763 84 10 - email: jean-marc.crevoisier@gesda.global

For more information, please visit the Foundation's website:

www.gesda.global