

Closing Ceremony of the Geneva Science and Diplomacy Anticipation Summit at CERN Science Gateway

GESDA joins forces with the Swiss Ministry of Foreign Affairs, CERN and UBS to get the Open Quantum Institute off the ground

Geneva, October 13, 2023

The GESDA Foundation announced, in Geneva on Friday, the launch of an Open Quantum Institute (OQI) in partnership with the Swiss Federal Department of Foreign Affairs (FDFA), CERN and UBS. The aim of the OQI is to make high-performance quantum computers available to all the people interested with finding solutions to accelerate the implementation of the UN's sustainable development goals (SDGs) in the fields of health, energy, climate protection and any relevant domain of application.

The OQI, designed and then incubated by GESDA with 130 partners from all over the world, will be embedded as of March 1, 2024, at CERN as part of its program of activities and supported by UBS.

The announcement of the launch of the OQI was made public today as part of the "Geneva Political Talks on Science and Diplomacy" that were held at the brand-new CERN Science Gateway during the Geneva Science and Diplomacy Anticipation Summit organized by GESDA. Now in its second year and with participation of 10 countries, this ministerial meeting, organized jointly by the Swiss Ministry of Foreign Affairs (FDFA) and GESDA Foundation, raises awareness of the merits of science diplomacy among invited countries.

"The world needs proactive scientific diplomacy. With the Open Quantum Institute, we have the first concrete proposal on how international governance can prepare for the challenges of the 21st century. I'm convinced that Switzerland must dare to take this path", said Federal Councillor Ignazio Cassis at the project launch in Geneva on Friday.

"Today, we are demonstrating that GESDA Foundation is both a think-tank and a do-tank that is capable of carrying out large-scale projects, find partners to design, run and fund them. The OQI also shows that science diplomacy, which aims to revitalize multilateralism by turning it towards action, can be highly effective and leading to success even in troubled geopolitical times", said Peter Brabeck-Letmathe, Chairman of GESDA. "The OQI is the result of work carried out over the last twenty-four months by some 130 partners and representatives in Geneva from some twenty countries. I thank them warmly".

"By the nature of its research, the technologies it develops, and its open science approach, CERN is well positioned to promote the application of transformative technologies to society. We are proud to be hosting the three-year pilot phase of the OQI," says CERN Director-General Fabiola Gianotti, "During the pilot phase, the OQI will benefit from CERN's experience of uniting people from across the globe to push the frontiers of science and technology for the benefit of all. We look forward to working with partners from academia, industry and governments to ensure that quantum computing has a positive impact for all of society."

"This partnership enables us to stay close to research and the field-testing of use cases in quantum computing. Building a network in this cutting-edge field can help us move fast when the technology reaches a mature state and starts to impact the world of business more radically," says UBS Group Chief Risk Officer Christian Bluhm. "We welcome the fact that OQI's use cases are relevant to the UN Sustainable Development Goals and that the program supports our commitment to first-class higher education institutions in Switzerland."

An Advisory Board, co-chaired by CERN and GESDA, including all project partners will oversee the development of the OQI during a three-year pilot phase that will be supported by UBS as Lead Partner of the OQI. Ultimately, the OQI will be an inclusive, science-based forum to support the development of future multilateral governance of quantum computing conducive to achieving the SDGs.

From 2021 GESDA Science Breakthrough Radar to the Launch of the OQI

In October 2021, the science community gathered by GESDA identified in the first edition of GESDA Science Breakthrough Radar 218 possible science breakthroughs at 5, 10, 25 years. One of them was Quantum Computing.

In less than 24 months, GESDA Foundation designed and incubated the nascent steps of the Open Quantum Institute, and then found two major partners to run and fund it in the next years: CERN and UBS. The birth of this Institute is the fruit of an exemplary collaboration between the private and public sectors, academia, scientists, and the international community present in Geneva as well as abroad. The genesis of the OQI is described in “The Intelligence Report on the multilateral governance of quantum computing for the SDGs”. The report was released on Friday under the aegis of the GESDA Diplomatic Forum, chaired till September 1st, 2023, by Alexandre Fasel, now State Secretary of the Swiss Federal Department of Foreign Affairs.

Quantum for All

The overarching goal of the OQI is to find ways to enable quantum computing to have the widest possible societal impact by promoting and facilitating access to quantum resources and technical quantum expertise. This will be achieved by:

- facilitating the exploration of quantum computing use cases that could help accelerate the achievement of the SDGs by connecting quantum technology experts (from industry, research institutions and universities) with representatives of governments and relevant international organizations.
- enabling inclusive and equitable access to a pool of public and private computers and simulators available in the cloud.
- developing educational tools, targeting users from underserved regions. Specific deliverables include the development of best practices on how to involve players from underserved regions in the use of quantum computing and the compilation of an initial inventory of OQI training instruments.
- based on the practical experience and lessons learned from the work within the OQI, contributing to discussions at scientific level, among governments and with international organizations around quantum computing and the SDGs, to anticipate an open, inclusive, fair and equitable future governance of this new technology.

Quantum Use Cases to Accelerate SDGs' Implementation

Accelerating the implementation of the UN Sustainable Development Goals is crucial. Here two examples of what the Open Quantum Institute will help developing.

- Thanks to quantum computing simulations, experts expect to reduce carbon dioxide (CO₂) in the atmosphere by improving the catalytic process responsible for fixing carbon to the surface of materials. This will contribute to SDG 13, which calls for action to combat climate change.
- Antibiotic resistance is considered by the World Health Organization (WHO) as 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 low-resistance chemical compounds to be identified on more targeted bacteria. This is tantamount to improving people's health and wellbeing, which is what SDG 3 - good health and wellbeing - is all about.

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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.

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Peter Brabeck-Letmathe, Chairman of GESDA Board of Directors, the Board Members as well as Sandro Giuliani, CEO of the Foundation, are available for interviews.

For more information, please visit the Foundation's website: www.gesda.global