

QuantaGENOMICS

NEWSLETTER - NOVEMBER, 2022



KICK-OFF MEETING

To contemplate the beginning of the activities associated with the QuantaGenomics Project, a Kick-off meeting was organized remotely on 19th May 2022. The objective of the meeting was to structure all the primary guidelines of the project, with a focus on the activities developed over the expected period.

During the first months, from the beginning of the project, the [official website](#) of the project was created and launched, with the aim of organizing information about the tasks and showing what is being done, such as participation in conferences, scientific productions, awards, etc.

ABOUT THE PROJECT

QuantaGenomics is a QuantERA ERA-NET Cofund in Quantum Technologies project with a focus on the development of a quantum-enabled secure multiparty computation service for collaborative genomic medicine.

In this issue:

Kick-off Meeting; QuantaGenomics Video; Participation in Conferences; Scientific Activities.

QUANTAGENOMICS VIDEO

QuantaGenomics Video

The video of the project was shared on Youtube, by Quantum Communications Group channel of IT, in August 2022.

Due to the excellent work done in the production of the video, positive responses were obtained. The video participated and won the Short-Video Contest "Different shades of Quantum Technologies" at the QuantERA Strategic Conference.



PARTICIPATION IN THE INTERNATIONAL CONFERENCE ON QUANTUM COMMUNICATION, MEASUREMENT AND COMPUTING

The QuantaGenomics Project was presented at the International Conference on Quantum Communication, Measurement, and Computing (QGCM). The conference took place in Lisbon, Portugal, on 11-15 July 2022.

The International Conference on Quantum Communication, Measurement, and Computing (QCMC) was established in 1990 to encourage and bring together scientists and engineers working in the interdisciplinary field of quantum information science and technology.

QuantaGENOMICS Project won the QuantERA Short Video Contest

PARTICIPATION IN THE QUANTERA STRATEGIC CONFERENCE

Quanter Strategic Conference



The QuantaGenomics Project was presented at the Quanter Strategic Conference. The conference took place in ICE Krakow Congress Centre, on 20-21 September 2022.

The event was a spot for QuantERA-funded projects presentations, strategic discussions, and scientific networking.

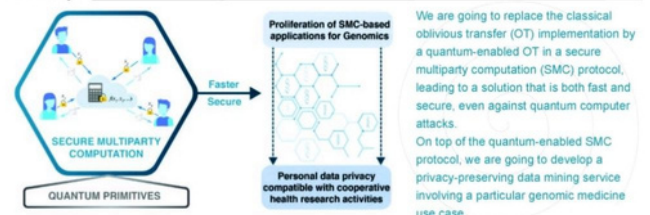
QUANTAGENOMICS PROJECT POSTER

QuantaGENOMICS

Quantum Enabled Secure Multiparty Computation for Genomic Medicine

QuantaGENOMICS project will provide the proof that quantum technologies can play a major role in solving the conflict between privacy and utility of collecting and mining huge quantities of sensible individuals' data.

Concept



Consortium



QuantaGENOMICS



Proj. Coordinator

IT - Instituto de Telecomunicações
Universidade de Aveiro
[Armando Pinto | anp@ua.pt]

Project duration

May 2022 – April 2025

Website

<https://quantagenomics.av.it.pt/>

Partners

- Sorbonne Université [Eleni Diamanti]
- INRIA [André Chailloux]
- CBR-Genomics [Ana Catarina Gomes]
- Universidad Politécnica de Madrid [Vicente Martín]
- ICFO [Valerio Pruneri]



This project was funded within the QuantERA II Programme that has received funding from the European Union's Horizon 2020 research and innovation programme under Grant Agreement No 101017733, and with funding organisations, The Foundation for Science and Technology – FCT (QuantERA/0001/2021), Agence Nationale de la Recherche – ANR, and State Research Agency – AEI.

CURRENT SCIENTIFIC ACTIVITIES

To the current date, two non-technical and one technical work packages (WPs) have been executed by the consortium: WP1 - Project Management, WP5 - Dissemination and Exploitation, and WP2 - Quantum Foundation for SMC. The WP7, Laboratory Validation, will start in month 7 of the project.

WP1 has provided the proper administrative and scientific management of the project, e.g. day-to-day operational administrative and contractual tasks of the project and establishing the interface and interaction with the QuantERA office.

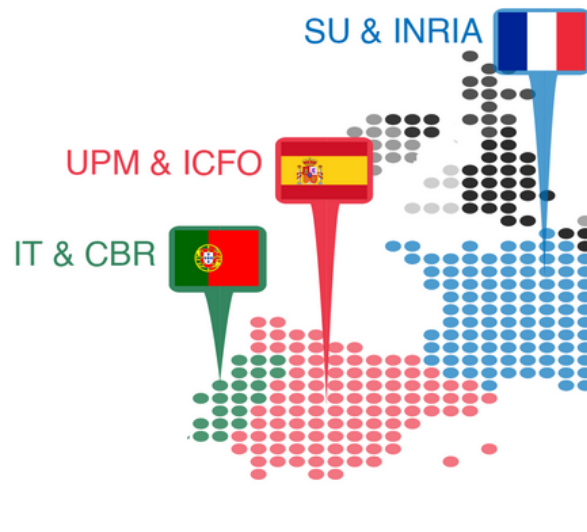
WP5 has ensured the dissemination of the project at different international events. Since the project is in the initial stage, there was no place for results exploitation, which represents also a key objective of this WP5.

WP2 has started through the activities of Task 2.1, whose main goal is to identify a set of quantum resources and cryptographic primitives to support fast and practical secure multiparty computation (SMC). This Task is led by SU and has the participation of three more partners, IT, INRIA and ICFO.

Two other WP2 tasks started on M4: T2.2 - Practical protocols for SMC with applications in genomics, whose main goal is to design a set of quantum protocols for SMC with applications in genomics, and T2.3 - Security analysis of SMC protocols, that aims at performing a security analysis of the developed quantum protocols. IT and CBR are the two partners working on T2.2, whereas IT and INRIA are the ones participating in T2.3.



QuantaGENOMICS



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