Quantera SAB

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London

Call 2017 for Transnational Research Proposals
Supporting the topics of Quantum Information and Communication Sciences and Technologies
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<td><strong>0 – 5 years</strong></td>
<td><strong>A</strong> Core technology of quantum repeaters</td>
<td><strong>A</strong> Simulator of motion of electrons in materials</td>
<td><strong>A</strong> Operation of a logical qubit protected by error correction or topologically</td>
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<td><strong>B</strong> Secure point-to-point quantum links</td>
<td><strong>B</strong> New algorithms for quantum simulators and networks</td>
<td><strong>B</strong> More precise atomic clocks for time stamping of high-frequency financial transactions</td>
<td><strong>B</strong> New algorithms for quantum computers</td>
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<td><strong>C</strong> Quantum networks between distant cities</td>
<td><strong>C</strong> Development and design of new complex materials</td>
<td><strong>C</strong> Quantum sensors for larger volume applications including automotive, construction</td>
<td><strong>C</strong> Small quantum processor executing technologically relevant algorithms</td>
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<td><strong>D</strong> Quantum credit cards</td>
<td><strong>D</strong> Versatile simulator of quantum magnetism and electricity</td>
<td><strong>D</strong> Handheld quantum navigation devices</td>
<td><strong>D</strong> Solving chemistry and materials science problems with special purpose quantum computer &gt; 100 physical qubit</td>
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<td><strong>&gt; 10 years</strong></td>
<td><strong>E</strong> Simulators of quantum dynamics and chemical reaction mechanisms to support drug design</td>
<td><strong>E</strong> Gravity imaging devices based on gravity sensors</td>
<td><strong>E</strong> Integration of quantum circuit and cryogenic classical control hardware</td>
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<td><strong>F</strong> Secure Europe-wide internet merging quantum and classical communication</td>
<td><strong>F</strong> Integrate quantum sensors with consumer applications including mobile devices</td>
<td><strong>F</strong> General purpose quantum computers exceed computational power of classical computers</td>
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Why Quantum?

Expected impacts
Funded projects are expected to significantly advance the state-of-the-art of Quantum Sciences and Technologies by achieving one or more of the following targets:
1. Develop a deeper fundamental and practical understanding of systems and protocols for manipulating and exploiting quantum information;
2. Enhance the robustness and scalability of quantum information technologies in the presence of environmental decoherence, hence facilitating their real-world deployment;
3. Develop reliable technologies for the different components of quantum architectures;
4. Identify new opportunities and applications fostered through quantum technologies, and the possible ways to transfer these technologies from laboratories to industries,
5. Enhance interdisciplinarity in crossing traditional boundaries between disciplines in order to enlarge the community involved to tackle these new challenges.
The quantum alliance

Academia

- Scientific knowledge and future breakthroughs
- Joint development

Government

- Customer/early adopter

Industry

- Identifying markets and opportunities

Coordination Clustering Standards Skills