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Project acronym: **Q-ESSENCE**

Project title: **Quantum Interfaces, Sensors, and Communication based on Entanglement**

Funding Scheme: **Collaborative Project (Large-Scale Integrating Project)**



DELIVERABLE REPORT

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The Q-ESSENCE project assisted in the organization of the industrial session at the QIPC Conference that took place 5-9 September 2013 at ETH in Zurich, Switzerland. This is the conference for quantum information in Europe and our target vehicle for previous industrial sessions. Previous years have seen a focus on quantum communication, this being one of the more advanced areas for quantum technologies, and we have brought people in from outside of the community. In 2011 however it was decided to have a mix of “external” and “internal” speakers covering computing as well as communication, on the industry side and from within the community we brought forward the idea of quantum metrology, one of the central themes of Q-essence. The speakers were:

- Dr Walter Riess, Head of the Science and technology Department of IBM-Zurich,
- Dr Grégoire Ribordy, CEO of IDQ
- Dr Jürgen Appel from the Niels Bohr Institute in Copenhagen
- Dr Bruno Sanguinetti from the Group of Applied Physics in Geneva.

It is notable that three out of four speakers originated from Q-ESSENCE institutions. The session provided an excellent forum in which to illustrate how we are looking to take fundamental concepts to the real world and to industry.

Plenary Program, QIPC 2011 @ HCI G3, ETH Höggerberg, Zurich

Starting Times	Monday, Sep. 5	Tuesday, Sep. 6	Wednesday, Sep. 7	Thursday, Sep. 8	Friday, Sep. 9
		Young Investigator Award			
9:00			EU Funding Note		
9:15	Opening Address	R. Hanson and S. Pironio			
9:30	Atomic Systems (Tilman Esslinger)	Superconducting Circuits (Christoph Bruder)	Photons (Matthias Christandl)	Mechanical Oscillators (Tobias Kippenberg)	Qu. Information Theory (Gianni Blatter)
9:30	Immanuel Bloch	Andrew Cleland	Eugene Polzik	Oskar Painter	Charles Bennett
10:10	Aurelian Dantan	Andreas Dewes	Igor Dotsenko	Albert Schliesser	Beni Yoshida
10:30	Stephen Hogan	Chris Wilson	Peter Shadbolt	Mika Sillanpää	Florian Fröwis
10:50	Coffee Break, 30'				
11:20	Rainer Blatt	Irfan Siddiqi	Konrad Lehnert	Florian Marquardt	Andreas Winter
11:50	Peter Zoller	Yasunobu Nakamura	Paul Kwiat	John Teufel	Tobias Osborne
12:20	Lunch, 1 h 20'	Lunch and odd numbered Posters, 2 h	Lunch and even numbered Posters, 2 h	Lunch and odd numbered Posters, 1 h 20'	Lunch and even numbered Posters, 2 h
			13:20 -14:10 EU Funding Session @ E Floor Cafeteria		
13:40	Quantum Communication (Renato Renner)	Parallel Sessions 14:20 - 16:00, 5 x 20'		Parallel Sessions 13:40 - 15:20, 5 x 20'	Parallel Sessions 14:20 - 16:00, 5 x 20'
13:40	Nicolas Gisin	A: Atomic Systems @ G3		E: Charges & Spins @ G3	H: Mech. Oscillators @ G3
14:20	Jürgen Eschner	B: Qu. Communication @ G7		F: Special Topics @ G7	I: Atomic Systems @ G7
14:40	Lars Lydersen	C: Supercond. Circuits @ J3		G: Photons @ J3	J: Qu. Inf. Theory @ J3
15:00	Matthias Christandl	D: Charges & Spins @ J7			
15:30	Jens Eisert			Coffee Break, 30'	
16:00	Coffee Break, 30'				
16:30	Charges & Spins (Daniel Loss)	Special Topics (Peter Zoller)	Charges & Spins (Thomas Ihn)	Atomic Systems 15:50 - 18:10 (Jonathan Home)	Topical Sessions
16:30	Amir Yacoby	Ignacio Cirac	Misha Lukin	Chris Monroe, 15:50	Geometric and Topological Phases @ G7
17:10	Sergey Frolov	Philip Walther	Matthieu Delbecq	Kenton Brown, 16:30	
17:30	Peter Leek	Philippe Corboz	Ronald Hanson	Stephan Ritter, 16:50	
17:50	Lieven Vandersypen	Christophe Salomon	David Awschalom	Philipp Treutlein, 17:10	
18:20	Charles Marcus	Fabian Hassler	Andrea Morello	Dieter Meschede, 17:40	Q-ESSENCE
				Bus Transport to Kunsthau at 18:30 & 18:45	Business Meeting @ J7
		20:00 - 23:00 Open Mike Discussion @ Vis Dome, ETH Main Building		19:00 - 24:00 Conference Event and Dinner @ Kunsthau	
Colors:	Invited Introductory, 40'	Contributed Hot Topic, 20'	Invited Topical, 30'	Contributed, 5 x 20'	Other Events and Sessions

Fri 2 - Sun 4
QIPC School 2011
@ Berghaus Diavolezza

Sun 4, 17 - 20:00
Welcome Reception
@ Faculty Lounge, ETH Main Building