

Minutes of the Fifth Management Committee Meeting of COST Action CA15220: " *Quantum Technologies in Space* "

*ESA-ESTEC in Noordwijk, The Netherlands
02/10/2019*

1. Welcome to participants

The participants were welcomed by Prof. Angelo Bassi, Chair of the Cost Action, who chaired the meeting.

2. Verification of the presence of two-thirds of the Participating COST Countries or, if applicable, a quorum

Countries having signed the MoU: Austria, Bosnia & Herzegovina, Croatia, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Israel, Italy, Latvia, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Spain, Sweden, Switzerland, Turkey, United Kingdom. Total: 26

Parties present at the meeting: Austria, Czech Republic, Germany, Hungary, Poland, Switzerland, United Kingdom + ESA.

Total: 7

The quorum is not reached

3. Adoption of agenda

The agenda (Annex I) was adopted

4. Approval of minutes and matters arising of last meeting

The minutes of the 4th MC meeting (20th November 2018, Noordwijk) were sent to the MC on 7th January 2019. No objection was raised, therefore they are approved.

Between the 4th and 5th MC meeting, the following evotes were set up:

- 24/02/2019: WG2 meeting in Olomuc
- 10/03/2019: Workshop in Rome
- 19/05/2019: New Grant Holder (GH) and GH Representative
- 02/07/2019: Meeting with the EC in Brussels
- 07/09/2019: EC-ESA workshop in Brussels
- 20/09/2019: ESA-ESTEC workshop on "QT in Space" in Noordwijk

(Annex II)

In addition: Regular updates and 4 Newsletters: 01/04/2019, 15/05/2019, 22/08/2019, 09/09/2019 (+7 in the past GPs)

5. Update from the Action Chair

- a) Status of Action: start and end dates of Action, participating COST countries, participating NNC/IPC institutions and Specific Organisations.**
- b) Short Term Scientific Missions (STSM): review of completed reports and new applications**

Start of the Action: 20/10/2016



End of Action: 19/10/2020

Participating COST countries: Austria, Bosnia & Herzegovina, Croatia, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Israel, Italy, Latvia, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Spain, Sweden, Switzerland, Turkey, United Kingdom. Total: 26

Since the 4th MC meeting, no further country joined the Action.

Participating NNC/IPC institutions: None

Specific Organisations: ESA – European Space Agency

STSMs. As per approved Budget Plan, the 7th call for STSM was announced on 11th June 2019, with four collections dates:

30th July 2019

30th September 2019

30th November 2019

31st January 2020

After the last collection date, if there is still available money, applications for STSMs will be dealt with based on a “first come, first served” basis, till the end of GP4 (30th April 2020).

The budget allocated to STSMs was 4.800 Eur, with a cost per STSM up to 800 Eur. The estimated number of STSMs is 6. So far only two application were received, and one approved (the other one is pending).

The Chair once again posed the problem that the STSMs tool is not working as it should. In particular, ECIs are not profiting from this possibility, in spite of the fact that the call has been repeatedly advertised, through emails and the website.

6. Update from the Grant Holder: Action budget status and new Action Manager

Budget as approved by the MC

| | |
|---|----------------|
| Meetings | 106.202,00 Eur |
| Munich (QSN): 15.000,00 Eur | |
| Munich (CG): 6.196,00 Eur | |
| Brussels: 30.000,00 Eur | |
| Zagreb: 15.000,00 Eur | |
| ESTEC: 40.006,00 Eur | |
| Training School | 0,00 Eur |
| STSMs | 4.800,00 Eur |
| ICT Conference Grant | 2.000,00 Eur |
| Dissemination | 0,00 Eur |
| OERSA (Bank charges) | 41,48 Eur |
| Subtotal | 113.043,48 Eur |
| FSAC (overheads) 15% of subtotal | 16.956,52 Eur |
| TOTAL | 130.000,00 Eur |

Current budget status

| | |
|-----------------------------|--------------|
| Munich (QSN): 3.214,00* Eur | 4.776.00 Eur |
| Munich (CG): canceled | |
| Brussels: 1.552,00* Eur | |
| ESTEC: not available yet | |
| Zagreb: canceled | |
| *estimate | |
| Training School | 0,00 Eur |
| STSMs | 800,00 Eur |
| ITC Conference Grant | 0,00 Eur |
| Dissemination | 0,00 Eur |
| OERSA (Bank charges) | 0,00 Eur |
| Subtotal | 5.566,00 Eur |
| (FSAC not included) | |

7. Update from the COST Association

None

8. Monitoring of the Action

PLUS

- A large community has been reached. Coordination activities work
- Strategic activities are effective (Policy White Paper + previous documents)
- Collaboration with ESA (ESTEC and ESRIN)
- Collaboration with the QT Flagship
- Ongoing discussions with the EC (DG GROW and DG CONNECT)

MINUS

- STSMs: not working
- Use of budget insufficient

9. Implementation of COST policies on:

- Promotion of gender balance and Early Career Investigators (ECI)**
- Inclusiveness and Excellence**

As for Gender Balance and ECIs, the situation is the following:

Action members (member = who registered on the Action website)

Total: 213 (ESTEC18: 184, Lisbon: 126, Malta: 48)

Male: 190 (ESTEC18: 166, Lisbon: 115, Malta: 45)

Female: 23 (ESTEC18: 18, Lisbon: 11, Malta: 3)

ECIs: 91 (ESTEC18: 81, Lisbon: 56, Malta: 10)

(in brackets: situation at the previous MC meeting)

Core Group (Chair, Deputy Chair, WG leaders and Deputy Leaders, Manager)

Total: 11

Male: 10

Female: 1

ECIs: 3

STSMs: 2 (2 in GP1, 5 in GP2, 5 in GP3)

Regarding Gender Balance, the situation is in line with expectations. Promotion of gender balance will continue. The Action Chair thanks the Gender Balance Coordinator Catalina for the constant effort she puts in promoting the Action as well as Gender Balance.

Regarding ECIs, the situation is very good, with a substantial increase of participation of younger students to our Activities.

As for Inclusiveness, the situation is as follows:

Action participating countries

Total: 26

ITCs: 11

Action Members

Total: 213 (ESTEC18: 184, Lisbon: 126, Malta: 48)

ITCs: 35 (ESTEC18: 26, Lisbon: 24, Malta: 15)

(in brackets: situation at the previous MC meeting)

Core Group

Total: 11

ITCs: 3

Events: GP1 (100% in ITCs), GP2 (33% in ITCs), GP3 (0% in ITCs), GP4 (0% in ITCs, so far)

As per MoU: at least 30% in ITCs. This year it has been difficult to organize events in ITCs, because several of them were attached to facilities (such as ESA premises), which are located in non-ITC countries.

As for Excellence, the situation is the following:

Major scientific actors: contacted/involved. These include:

- Scientific community (constantly growing)
- Industrial community (growing)
- ESA (ESTEC and ESRIN)
- QT Flagship
- EC (DG GROW and DG CONNECT)

Strategic Report on “Quantum Technologies in Space”

<http://www.qtspace.eu/?q=strategicrep>

Participation to the writing of the “Supporting Quantum Technologies beyond H2020”

<https://qt.eu/news/working-paper-v1-1/>

NEW: Policy White Paper on QT in Space

<http://www.qtspace.eu/?q=whitepaper>

Companies in contact with: Airbus Defense & Space, OHB, Airbus, SES, Thales Alenia Space, Toptica, Single Quantum, PhotonSpot, E2V, British Telecom, Deutsche Telekom, ONERA, Lusospace, IDQ, Tekever, Embvraer, Muquans, iXBlue, e2V

10. Follow-up of MoU objectives: progress report of working groups

The review of the WG’s activities has been presented. Discussion followed.

11. Scientific planning

a) Scientific strategy (MoU objectives, GP Goals, WG tasks and deliverables)

b) Action Budget Planning

c) Long-term planning (including anticipated locations and dates of future activities)

d) Dissemination planning (Publications and outreach activities)

The Action Chair reminded the MC about the Objectives of the Action, as per MoU.

The Action Chair presented an overview of the GP goals, tasks and deliverables of each WG, as per MoU. The GP is only half way through.



GP4 budget needed revision

- Meetings were cheaper than expected
- Fewer STSMs than expected

The situation is under control. GP4 ends in April 2019, there is plenty of time for planning.

As for future activities:

- WG meeting + workshop in Budapest (April 2019) – to be defined.

A revised budget plan will be prepared and sent to the MC for approval.

As for dissemination:

- Website QTSpace fully working and constantly updated (main activity)
 - Public area: for the wider community
 - Reserved area: for registered members (registration is moderated)
 - Collect information for statistics and reports
- Newsletters: 11 sent out so far
- Publications: needs to be updated → email to Action members
- Video “QTSpace: Learn from Laika the dog and Schrodinger's cat”. Check on the QTSpace website

12. Requests to join the Action from:

a) COST countries

b) Institutions in Near Neighbouring Countries, International Partner Countries, and/or Specific Organisations: EU agencies, European RTD Organisation, International Organisations

No new request to be approved.

13. Preparation for the Final Report

The Action Chair informs the MC that the Final Report has to be prepared. It illustrates which type of information is required and how to gather it. The Core Group will assist the Chair in preparing the Report.

14. AOB

A lobbying group consisting of Chairs, Vice-Chairs and former Grant Holders of COST Actions managed in the UK has been set up in response to COST request to move Grant Holder position to non-UK institutions in the Spring of 2019. The group has been engaged in discussions with the Department of Business, Energy and Industrial Strategy (BEIS) of the UK Government and, more recently, with the Government Chief Scientific Adviser, Sir Patrick Vallance. As a result of these discussions, the UK Government has agreed to finance the UK participation in COST until the end of 2020 to ensure continuity of support to UK research organisation involved in COST. In the event of a no deal scenation, BEIS will administer funding to UK participants in COST Actions.

15. Location and date of next meeting

To be decided.

16. Summary of MC decisions

No decision was taken, as there was no majority at the meeting

17. Closing

The Action Chair acknowledges support and assistance from:

- The COST Association (Dr. Fatima Bouchama and Ms. Cassia Azevedo / Milena Stoyanova)



- The MC
- The CG
- ESA (Bruno Leone)

The Action Chair reminds the MC members to sign the attendance list.

ANNEXES

Annex I. Agenda of the MC meeting.

Annex II. List of evotes

Annex III. Presentation by the Action Chair.



COST Action CA15220
Action Title: Quantum Technologies in Space

Draft Agenda
Management Committee Meeting
Noordwijk, Netherlands
02 October 2019

1. Welcome to participants
2. Verification of the presence of two-thirds of the Participating COST Countries or, if applicable, a quorum
3. Adoption of agenda
4. Approval of minutes and matters arising of last meeting
5. Update from the Action Chair
 - a) Status of Action: start and end dates of Action, participating COST countries, participating NNC/IPC institutions and Specific Organisations.
 - b) Short Term Scientific Missions (STSM): review of completed reports and new applications
6. Update from the Grant Holder: Action budget status
7. Update from the COST Association, if a representative is present
8. Monitoring of the Action
9. Implementation of COST policies on:
 - a) Promotion of gender balance and Early Career Investigators (ECI)
 - b) Inclusiveness and Excellence (see below list of Inclusiveness Target Countries)
10. Follow-up of MoU objectives: progress report of working groups
11. Scientific planning
 - a) Scientific strategy (MoU objectives, GP Goals, WG tasks and deliverables)
 - b) Action Budget Planning
 - c) Long-term planning (including anticipated locations and dates of future activities)
 - d) Dissemination planning (Publications and outreach activities)
12. Requests to join the Action from:
 - a) COST countries
 - b) Institutions in Near Neighbouring Countries, International Partner Countries, and/or Specific Organisations: EU agencies, European RTD Organisation, International Organisations
13. Preparation of the Final Report
14. AOB
15. Location and date of next meeting
16. Summary of MC decisions
17. Closing

From: Angelo Bassi abassi@units.it
Subject: COST Action CA15220: New WG2 meeting in Olomuc (eVote)
Date: 24 February 2019 at 18:29



To: Angelo Bassi bassi@ts.infn.it, Mauro Paternostro m.paternostro@qub.ac.uk, Rupert Ursin rupert@ursin.com, Rainer Kaltenbaek rainer.kaltenbaek@univie.ac.at, Vladyslav Usenko usenko@optics.upol.cz, Albert Roura albert.roura@uni-ulm.de, Christoph Marquardt christoph.marquardt@mpl.mpg.de, Michael Drewsen drewsen@phys.au.dk, Maciej Lewenstein maciej.lewenstein@icfo.es, Romain QUIDANT romain.quidant@icfo.es, Philippe BOUYER philippe.bouyer@institutoptique.fr, Antoine Heidmann antoine.heidmann@lkb.upmc.fr, Sabrina Maniscalco smanis@utu.fi, Gheorghe-Sorin Paroanu sorin.paroanu@aalto.fi, Lucia Hackermuller lucia.hackermuller@nottingham.ac.uk, Wolf von Klitzing wvk@iesl.forth.gr, Savvidis Ioannis i.savvidis@cmc.gov.gr, Lajos Diosi diosi.lajos@wigner.mta.hu, Géza Toth geza.toth.hu@gmail.com, Mario Stipcevic mario.stipcevic@irb.hr, Catalina Curceanu catalina.curceanu@inf.infn.it, Guglielmo Tino tino@fi.infn.it, Hagai Eisenberg hagai.eisenberg@huji.ac.il, Alexander RETZKER retzker@phys.huji.ac.il, Emanuele Pelucchi emanuele.pelucchi@tyndall.ie, Vyacheslavs Kashcheyevs slava@latnet.lv, Marcis Auzinsh Marcis.Auzins@lu.lv, Andre Xuereb andre.xuereb@um.edu.mt, Joakim Bergli joakim.bergli@fys.uio.no, Lars M. Johansen@hbv.no, Simon Groeblacher s.groeblacher@tudelft.nl, Yasser Omar yasser.omar@lx.it.pt, Jose Leitao jleitao@lx.it.pt, Jaroslaw Miszczak jarek@mischczak.eu, Radu Ionicioiu r.ionicioiu@theory.nipne.ro, Marius Trusculescu@spacescience.ro, boure@fysik.su.se, Jan-Åke Larsson jan-ake.larsson@liu.se, Mario Ziman ziman@savba.sk, Özgür Müstecaplıoğlu omustecap@ku.edu.tr, Humeyra Caglayan hcaglayan@bilkent.edu.tr, Andre Stefanov andre.stefanov@iap.unibe.ch, ulrik.andersen@fysik.dtu.dk, Fabian Steinlechner Fabian.Steinlechner@univie.ac.at, Nikolai Kiesel nikolai.kiesel@univie.ac.at, Jaromir Fjurasek fjurasek@optics.upol.cz, Radim Filip filip@optics.upol.cz, Erik Beckett erik.beckett@iof.fraunhofer.de, Claus Laemmerzahl claus.laemmerzahl@zarm.uni-bremen.de, Valerio Pruneri valerio.pruneri@icfo.es, Serge Reynaud serge.reynaud@upmc.fr, Astrid Lambrecht astrid.lambrecht@upmc.fr, Hendrik Ulbricht h.ulbricht@soton.ac.uk, Laszlo Bacsardi bacsardi@inf.nyme.hu, Paolo Villorosi paolo.villorosi@dei.unipd.it, David Vitali david.vitali@unicam.it, Kjetil Borkje@usn.no, Markku Jaaskelainen mj@du.se, Landragin ARNAUD arnaud.landragin@obspm.fr, Ivette FUENTES ivette.fuentes@nottingham.ac.uk, Eric Wille eric.wille@esa.int, Bruno Leone@esa.int, Eamonn Murphy - ESA eamonn.murphy@esa.int, Serkan Ateş serkanates@iyte.edu.tr, Humeyra Caglayan humeyra.caglayan@tut.fi, Ticijana Ban ticijana@ifs.hr, Miralem Mehic miralem@mehic.info
Cc: Gary Hall g.hall@qub.ac.uk

To: MC Members of the COST Action CA15220 "Quantum Technologies in Space"
Cc: Substitute Members and Observers
Gary Hall (Action's Manager)

Subject: New WG2 meeting in Olomuc (eVote)

Dear Friends and Colleagues,

I hope this email finds you all well. The current grant period (GP3) will come to an end in about two months; we have a new proposal for a WG meeting (we still have some leftover money, as reported at the last MC meeting). I am writing to ask for your approval:

Title: Next steps towards a quantum physics platform in space
Place: Olomouc - Czech Republic (precise location to be defined soon)
Dates: April 11-12, 2019

In 2017, the topic of testing quantum physics in space with a focus on the boundaries of and the relationship between quantum and classical physics, in particular investigating the aspects known as quantum decoherence, was selected as a topic of interest in the context of the European Space Agency's (ESA) call for New Science Ideas. As a result, a detailed feasibility study was performed in 2018 at ESA's Concurrent Design Facility. While the study confirmed the feasibility of the mission concept, it also identified two critical issues that will need to be addressed in future mission proposals. At the meeting in Olomouc, the goal will be to discuss addressing these critical issues, to foster the formation of a consortium to push the future implementation of a space mission to test the foundations of physics. Particular effort will be put on discussing necessary technology developments in the handling of high-mass test particles and in assuring the required environmental conditions for macroscopic quantum experiments in space.

Organizers: R. Kaltenbaek, V. Usenko, R. Filip

Proposed budget: 17.000 Eur

Breakdown of costs:

- Accommodation: 80 Eur/night (max 3 nights).
- Travel: max 300 Eur (exceptions are possible, under prior approval of the Action Chair).
- Meals as per COST rules.
- Local transport and taxi as per COST rules.

Deadline for voting: Friday 1st March 2018.

No reply means that you approve.

Thank you and kind regards,
Angelo

Department of Physics
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ITALY

From: Angelo Bassi bassi@ts.infn.it
Subject: COST Action CA15220: Result of eVote of 24th February 2019 - New WG2 meeting in Olomuc
Date: 4 March 2019 at 15:18



To: Angelo Bassi bassi@ts.infn.it, Mauro Paternostro m.paternostro@qub.ac.uk, Rupert Ursin rupert@ursin.com, Rainer Kaltenbaek rainer.kaltenbaek@univie.ac.at, Vladyslav Usenko usenko@optics.upol.cz, Albert Roura albert.roura@uni-ulm.de, Christoph Marquardt christoph.marquardt@mpl.mpg.de, Michael Drewsen drewsen@phys.au.dk, Maciej Lewenstein maciej.lewenstein@icfo.es, Romain QUIDANT romain.quidant@icfo.es, Philippe BOUYER philippe.bouyer@institutoptique.fr, Antoine Heidmann antoine.heidmann@lkb.upmc.fr, Sabrina MANISCALCO smanis@utu.fi, Gheorghe-Sorin Paraoanu sorin.paraoanu@aalto.fi, Lucia Hackermuller lucia.hackermuller@nottingham.ac.uk, Wolf von Klitzing wvk@iesl.forth.gr, Savvidis Ioannis i.savvidis@cmc.gov.gr, Lajos Diosi diosi.lajos@wigner.mta.hu, Géza Toth geza.toth.hu@gmail.com, Mario Stipcevic mario.stipcevic@irb.hr, Catalina Curceanu catalina.curceanu@inf.infn.it, Guglielmo Tino tino@fi.infn.it, Hagai Eisenberg hagai.eisenberg@huji.ac.il, Alexander RETZKER retzker@phys.huji.ac.il, Emanuele Pelucchi emanuele.pelucchi@tyndall.ie, Vyacheslavs Kashcheyevs slava@latnet.lv, Marcis Auzins Marcis.Auzins@lu.lv, Andre Xuereb andre.xuereb@um.edu.mt, Joakim bergli joakim.bergli@fys.uio.no, Lars M. Johansen lars.m.johansen@hbv.no, Simon Groeblicher s.groeblicher@tudelft.nl, Yasser Omar yasser.omar@lx.it.pt, Jose Leitao jleitao@lx.it.pt, Jaroslaw Miszczak jarek@mischczak.eu, Radu Ionicioiu r.ionicioiu@theory.nipne.ro, Marius Trusculescu marius.trusculescu@spacescience.ro, boure@fysik.su.se, Jan-Åke Larsson jan-ake.larsson@liu.se, Mario Ziman ziman@savba.sk, Özgür Müstecaplıoğlu omustecap@ku.edu.tr, Humeyra Caglayan hcaglayan@bilkent.edu.tr, Andre Stefanov andre.stefanov@iap.unibe.ch, ulrik.andersen@fysik.dtu.dk, Fabian Steinlechner Fabian.Steinlechner@univie.ac.at, Nikolai Kiesel nikolai.kiesel@univie.ac.at, Jaromir Fiurasek fiurasek@optics.upol.cz, Radim Filip filip@optics.upol.cz, Erik Beckett erik.beckett@iof.fraunhofer.de, Claus Laemmerzahl claus.laemmerzahl@zarm.uni-bremen.de, Valerio Pruneri valerio.pruneri@icfo.es, Serge Reynaud serge.reynaud@upmc.fr, Astrid Lambrecht astrid.lambrecht@upmc.fr, Hendrik Ulbricht h.ulbricht@soton.ac.uk, Laszlo Bacsardi bacsardi@inf.nyme.hu, Paolo Villorosi paolo.villorosi@dei.unipd.it, David Vitali david.vitali@unicam.it, kjetil.borkje@usn.no, Markku Jaaskelainen mjk@du.se, Landragin ARNAUD arnaud.landragin@obspm.fr, Ivette FUENTES ivette.fuentes@nottingham.ac.uk, Eric Wille eric.wille@esa.int, Bruno Leone bruno.leone@esa.int, Eamonn Murphy - ESA eamonn.murphy@esa.int, Serkan Ateş serkanates@iyte.edu.tr, Humeyra Caglayan humeyra.caglayan@tut.fi, Ticijana Ban ticijana@ifs.hr, Miralem Mehic miralem@mehic.info
Cc: Gary Hall g.hall@qub.ac.uk

To: MC Members of the COST Action CA15220 "Quantum Technologies in Space"
Cc: Substitute Members and Observers
Gary Hall (Action's Manager)

Subject: Result of eVote of 24th February 2019 - New WG2 meeting in Olomuc

Dear Friends and Colleagues,

I received no objection to the eVote of 24th February 2019, it is unanimously approved.

Thank you and kind regards,
Angelo

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Web: www.qmts.it

From: Angelo Bassi bassi@ts.infn.it
Subject: COST Action CA15220: Workshop in Rome (eVote)
Date: 10 March 2019 at 21:14



To: Angelo Bassi bassi@ts.infn.it, Mauro Paternostro m.paternostro@qub.ac.uk, Rupert Ursin rupert@ursin.com, Rainer Kaltenbaek rainer.kaltenbaek@univie.ac.at, Vladyslav Usenko usenko@optics.upol.cz, Albert Roura albert.roura@uni-ulm.de, Christoph Marquardt christoph.marquardt@mpl.mpg.de, Michael Drewsen drewsen@phys.au.dk, Maciej Lewenstein maciej.lewenstein@icfo.es, Romain QUIDANT romain.quidant@icfo.es, Philippe BOUYER philippe.bouyer@institutoptique.fr, Antoine Heidmann antoine.heidmann@lkb.upmc.fr, Sabrina Maniscalco smanis@utu.fi, Gheorghe-Sorin Paroanu sorin.paroanu@aalto.fi, Lucia Hackermuller luca.hackermuller@nottingham.ac.uk, Wolf von Klitzing wk@iesl.forth.gr, Savvidis Ioannis i.savvidis@cmc.gov.gr, Lajos Diosi diosi.lajos@wigner.mta.hu, Géza Toth geza.toth.hu@gmail.com, Mario Stipcevic mario.stipcevic@irb.hr, Catalina Curceanu catalina.curceanu@inf.infn.it, Guglielmo Tino tino@fi.infn.it, Hagai Eisenberg hagai.eisenberg@huji.ac.il, Alexander RETZKER retzker@phys.huji.ac.il, Emanuele Pelucchi emanuele.pelucchi@tyndall.ie, Vyacheslavs Kashcheyevs slava@latnet.lv, Marcis Auzinsh Marcis.Auzins@lu.lv, Andre Xuereb andre.xuereb@um.edu.mt, Joakim Bergli joakim.bergli@fys.uio.no, Lars M. Johansen lars.m.johansen@hbv.no, Simon Groeblacher s.groeblacher@tudelft.nl, Yasser Omar yasser.omar@lx.it.pt, Jose Leitao jleitao@lx.it.pt, Jaroslaw Miszczak jarek@mischczak.eu, Radu Ionicioiu r.ionicioiu@theory.nipne.ro, Marius Trusculescu marius.trusculescu@spacescience.ro, boure@fysik.su.se, Jan-Åke Larsson jan-ake.larsson@liu.se, Mario Ziman ziman@savba.sk, Özgür Müstecaplıoğlu omustecap@ku.edu.tr, Humeyra Caglayan hcaglayan@bilkent.edu.tr, Andre Stefanov andre.stefanov@iap.unibe.ch, ulrik.andersen@fysik.dtu.dk, Fabian Steinlechner Fabian.Steinlechner@univie.ac.at, Nikolai Kiesel nikolai.kiesel@univie.ac.at, Jaromir Fiurasek fiurasek@optics.upol.cz, Radim Filip filip@optics.upol.cz, Erik Beckert erik.beckert@iof.fraunhofer.de, Claus Laemmerzahl claus.laemmerzahl@zarm.uni-bremen.de, Valerio Pruneri valerio.pruneri@icfo.es, Serge Reynaud serge.reynaud@upmc.fr, Astrid Lambrecht astrid.lambrecht@upmc.fr, Hendrik Ulbricht h.ulbricht@son.ac.uk, Laszlo Bacsardi bacsardi@inf.nyme.hu, Paolo Villoresi paolo.villoresi@dei.unipd.it, David Vitali david.vitali@unicam.it, Kjetil Borkje kjetil.borkje@usn.no, Markku Jaaskelainen mjk@du.se, Landragin ARNAUD arnaud.landragin@obspm.fr, Ivette FUENTES ivette.fuentes@nottingham.ac.uk, Eric Wille eric.wille@esa.int, Bruno Leone bruno.leone@esa.int, Eamonn Murphy - ESA eamonn.murphy@esa.int, Serkan Ateş serkanates@iyte.edu.tr, Humeyra Caglayan humeyra.caglayan@tut.fi, Ticijana Ban ticijana@ifs.hr, Miralem Mehic miralem@mehic.info
Cc: Gary Hall g.hall@qub.ac.uk

To: MC Members of the COST Action CA15220 "Quantum Technologies in Space"
Cc: Substitute Members and Observers
Gary Hall (Action's Manager)

Subject: Workshop in Rome (eVote)

Dear Friends and Colleagues,

I am writing to ask for your approval for another activity we will carry on during the current GP. It is a satellite event and thematic session at the conference "Quantum Information and Measurement V: Quantum Technologies", Rome 4–6 April 2019. Herewith attached you may find the relevant information. The allocated budget is 15,000 Eur and the reimbursement rules are the standard COST ones.

Deadline for voting: Friday 15th March 2019.

No reply means that you approve.

Thank you and kind regards,
Angelo



Doc12.pdf

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Web: www.qmts.it

Proposal for satellite event and thematic session at the conference “Quantum Information and Measurement V: Quantum Technologies”, Rome 4–6 April 2019

Goals addressed: Research coordination 3: identify principles that should be demonstrated on ground, coordinate which experiments to perform; Research Coordination 4: Share knowledge with respect to available technologies and experimental techniques for perform experiments in spare-relevant settings; Research coordination 6: Technology development in international cooperation.

Description: The QTSpace-funded mini-workshop on Quantum Computing for Earth Observation which was held on 15 November 2018 at the ESA Phi-Week (http://phiweek.esa.int/page_phiweek2018.php) in ESA’s ESRIN establishment in Frascati, Italy, let emerge substantial ground for the bridging of the communities interested in Earth observation and quantum data processing.

At the ESRIN event, representatives from the Quantum Computing community, from both academia and industry, met with Earth Observation practitioners. The aim was to explore possible synergies between the two technologies to stimulate their further development and to accelerate their impact for societal benefit.

One of the recommendations following this event was to increase the mutual awareness of the needs and capabilities of the Quantum Computing and Earth Observation communities. The need to embed such an event into a broader context able to attract the interest of the quantum community working on big data processing makes the venue embodied by the OSA sponsored Fifth Quantum Technologies Conference (QIM V, <http://www.quantumlab.it/qim2019/>) perfectly suited. QIM V is the perfect venue to bring the communities together, taking advantage of the availability of world-leading quantum experts speaking at the conference, and the large pool of EO experts from industry, academia and public organisations situated in the Rome area.

We propose to hold a satellite workshop to QIM V, to be convened on 3 April 2019 at Sapienza, focused on the application of mining methodologies enhanced by quantum mechanics for downstream data processing and Earth Observation data exploitation. The workshop aims to prepare the ground for the opportunities that will be presented when the quantum community will be able to produce software for quantum-enhanced optimisation problems of direct use in big data management. Together with Machine Learning, Quantum Computing will be a game-changer in data science and applications. The satellite workshop will be open to the participation of all QIM V attendees and will see international experts invited to speak, and a round table to set up the ground for further initiatives.

The conference’s explicit focus on the development of quantum technologies allows other interesting possibilities for the engagement with the quantum community working on space communication and applications. Renowned international speakers such as Prof. J.-W. Pan will present in Rome and QTSpace should take advantage of this opportunity to disseminate its activities and results.

Financial Proposal: Support to the speakers of the satellite (likely 3 speakers will be supported by QTSpace) and the support to the speakers of one of the sessions of QIM V, which will become a QTSpace thematic session.

We propose the application of the standard COST reimbursement rules, for a total budget of about 15k Euros, which will include cover of part of the LOS by the organisers.

Personnel responsible for QTSpace: Mauro Paternostro and Angelo Bassi

Local Organising committee: Fabio Sciarrino and the QuantumLab group at Sapienza University of Rome.

Dates of the events: Satellite workshop on 3 April 2019; thematic session at QIM V: one session during 4–6 April 2019.

From: Angelo Bassi bassi@ts.infn.it
Subject: COST Action CA15220: Result of eVote of 10th March 2019 - Workshop in Rome
Date: 18 March 2019 at 13:45



To: Angelo Bassi bassi@ts.infn.it, Mauro Paternostro m.paternostro@qub.ac.uk, Rupert Ursin rupert@ursin.com, Rainer Kaltenbaek rainer.kaltenbaek@univie.ac.at, Vladyslav Usenko usenko@optics.upol.cz, Albert Roura albert.roura@uni-ulm.de, Christoph Marquardt christoph.marquardt@mpl.mpg.de, Michael Drewsen drewsen@phys.au.dk, Maciej Lewenstein maciej.lewenstein@icfo.es, Romain QUIDANT romain.quidant@icfo.es, Philippe BOUYER philippe.bouyer@institutoptique.fr, Antoine Heidmann antoine.heidmann@lkb.upmc.fr, Sabrina Maniscalco smanis@utu.fi, Gheorghe-Sorin Paroanu sorin.paroanu@aalto.fi, Lucia Hackermuller lucia.hackermuller@nottingham.ac.uk, Wolf von Klitzing wvk@iesl.forth.gr, Savvidis Ioannis i.savvidis@cmc.gov.gr, Lajos Diosi diosi.lajos@wigner.mta.hu, Géza Toth geza.toth.hu@gmail.com, Mario Stipcevic mario.stipcevic@irb.hr, Catalina Curceanu catalina.curceanu@inf.infn.it, Guglielmo Tino tino@fi.infn.it, Hagai Eisenberg hagai.eisenberg@huji.ac.il, Alexander RETZKER retzker@phys.huji.ac.il, Emanuele Pelucchi emanuele.pelucchi@tyndall.ie, Vyacheslavs Kashcheyevs slava@latnet.lv, Marcis Auzinsh Marcis.Auzins@lu.lv, Andre Xuereb andre.xuereb@um.edu.mt, Joakim Bergli joakim.bergli@fys.uio.no, Lars M. Johansen lars.m.johansen@hbv.no, Simon Groeblacher s.groeblacher@tudelft.nl, Yasser Omar yasser.omar@lx.it.pt, Jose Leitao jleitao@lx.it.pt, Jaroslaw Miszczak jarek@mischczak.eu, Radu Ionicioiu r.ionicioiu@theory.nipne.ro, Marius Trusculescu marius.trusculescu@spacescience.ro, boure@fysik.su.se, Jan-Åke Larsson jan-ake.larsson@liu.se, Mario Ziman ziman@savba.sk, Özgür Müstecaplıoğlu omustecap@ku.edu.tr, Humeyra Caglayan hcaglayan@bilkent.edu.tr, Andre Stefanov andre.stefanov@iap.unibe.ch, ulrik.andersen@fysik.dtu.dk, Fabian Steinlechner Fabian.Steinlechner@univie.ac.at, Nikolai Kiesel nikolai.kiesel@univie.ac.at, Jaromir Fiurasek fiurasek@optics.upol.cz, Radim Filip filip@optics.upol.cz, Erik Beckert erik.beckert@iof.fraunhofer.de, Claus Laemmerzahl claus.laemmerzahl@zarm.uni-bremen.de, Valerio Pruneri valerio.pruneri@icfo.es, Serge Reynaud serge.reynaud@upmc.fr, Astrid Lambrecht astrid.lambrecht@upmc.fr, Hendrik Ulbricht h.ulbricht@soton.ac.uk, Laszlo Bacsardi bacsardi@inf.nyme.hu, Paolo Villorosi paolo.villorosi@dei.unipd.it, David Vitali david.vitali@unicam.it, kjetil.borkje@usn.no, Markku Jaaskelainen mjk@du.se, Landragin ARNAUD arnaud.landragin@obspm.fr, Ivette FUENTES ivette.fuentes@nottingham.ac.uk, Eric Wille eric.wille@esa.int, Bruno Leone bruno.leone@esa.int, Eamonn Murphy - ESA eamonn.murphy@esa.int, Serkan Ateş serkanates@iyte.edu.tr, Humeyra Caglayan humeyra.caglayan@tut.fi, Ticijana Ban ticijana@ifs.hr, Miralem Mehic miralem@mehic.info
Cc: Gary Hall g.hall@qub.ac.uk

To: MC Members of the COST Action CA15220 "Quantum Technologies in Space"
Cc: Substitute Members and Observers
Gary Hall (Action's Manager)

Subject: Result of eVote of 10th March 2019 - Workshop in Rome

Dear Friends and Colleagues,

I received no objection to the eVote of 10th March 2019, it is unanimously approved.

Thank you and kind regards,
Angelo

Department of Physics
Strada Costiera 11
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From: Angelo Bassi bassi@ts.infn.it
Subject: COST Action CA15220: New Grant Holder (GH) and GH Representative (eVote)
Date: 19 May 2019 at 18:19



To: Angelo Bassi bassi@ts.infn.it, Mauro Paternostro m.paternostro@qub.ac.uk, Rupert Ursin rupert@ursin.com, Rainer Kaltenbaek rainer.kaltenbaek@univie.ac.at, Vladyslav Usenko usenko@optics.upol.cz, Albert Roura albert.roura@uni-ulm.de, Christoph Marquardt christoph.marquardt@mpl.mpg.de, Michael Drewsen drewsen@phys.au.dk, Maciej Lewenstein maciej.lewenstein@icfo.es, Romain QUIDANT romain.quidant@icfo.es, Philippe BOUYER philippe.bouyer@institutoptique.fr, Antoine Heidmann antoine.heidmann@lkb.upmc.fr, Sabrina Maniscalco smanis@utu.fi, Gheorghe-Sorin Paroanu sorin.paroanu@aalto.fi, Lucia Hackermuller lucia.hackermuller@nottingham.ac.uk, Wolf von Klitzing wvk@iesl.forth.gr, Savvidis Ioannis i.savvidis@cmc.gov.gr, Lajos Diosi diosi.lajos@wigner.mta.hu, Géza Toth geza.toth.hu@gmail.com, Mario Stipcevic mario.stipcevic@irb.hr, Catalina Curceanu catalina.curceanu@inf.infn.it, Guglielmo Tino tino@fi.infn.it, Hagai Eisenberg hagai.eisenberg@huji.ac.il, Alexander RETZKER retzker@phys.huji.ac.il, Emanuele Pelucchi emanuele.pelucchi@tyndall.ie, Vyacheslavs Kashcheyevs slava@latnet.lv, Marcis Auzinsh Marcis.Auzins@lu.lv, Andre Xuereb andre.xuereb@um.edu.mt, Joakim bergli@fys.uio.no, Lars M. Johansen@hbv.no, Simon Groeblicher s.groeblicher@tudelft.nl, Yasser Omar yasser.omar@lx.it.pt, Jose Leitao jleitao@lx.it.pt, Jaroslaw Miszczak jarek@mischczak.eu, Radu Ionicioiu r.ionicioiu@theory.nipne.ro, Marius Trusculescu@spacescience.ro, boure@fysik.su.se, Jan-Åke Larsson jan-ake.larsson@liu.se, Mario Ziman ziman@savba.sk, Özgür Müstecaplıoğlu omustecap@ku.edu.tr, Humeyra Caglayan hcaglayan@bilkent.edu.tr, Andre Stefanov andre.stefanov@iap.unibe.ch, ulrik.andersen@fysik.dtu.dk, Fabian Steinlechner Fabian.Steinlechner@univie.ac.at, Nikolai Kiesel nikolai.kiesel@univie.ac.at, Jaromir Fiurasek fiurasek@optics.upol.cz, Radim Filip filip@optics.upol.cz, Erik Beckert erik.beckert@iof.fraunhofer.de, Claus Laemmerzahl claus.laemmerzahl@zarm.uni-bremen.de, Valerio Pruneri valerio.pruneri@icfo.es, Serge Reynaud serge.reynaud@upmc.fr, Astrid Lambrecht astrid.lambrecht@upmc.fr, Hendrik Ulbricht h.ulbricht@son.ac.uk, Laszlo Bacsardi bacsardi@inf.nyme.hu, Paolo Villorosi paolo.villorosi@dei.unipd.it, David Vitali david.vitali@unicam.it, kjetil.borkje@usn.no, Markku Jaaskelainen mj@du.se, Landragin ARNAUD arnaud.landragin@obspm.fr, Ivette FUENTES ivette.fuentes@nottingham.ac.uk, Eric Wille eric.wille@esa.int, Bruno Leone@esa.int, Eamonn Murphy - ESA eamonn.murphy@esa.int, Serkan Ateş serkanates@iyte.edu.tr, Humeyra Caglayan humeyra.caglayan@tut.fi, Ticijana Ban ticijana@ifs.hr, Miralem Mehic miralem@mehic.info
Cc: Fatima Bouchama fatima.bouchama@cost.eu, Cassia Azevedo Cassia.Azevedo@cost.eu, Gary Hall g.hall@qub.ac.uk

To: MC Members of the COST Action CA15220 "Quantum Technologies in Space"

Cc: Substitute Members and Observers

Gary Hall (Action's Manager)

Fatima Bouchama and Cassia Azevedo (COST Association)

Subject: New Grant Holder (GH) and GH Representative (eVote)

Dear Friends and Colleagues,

although the Brexit process has no clear outcome, the COST Association asked all COST Actions with a UK Grant Holder (GH) to identify a new one, not in UK.

I am not happy with this request, which I find unjustified given that Brexit (and which kind of Brexit) is not granted yet, and I expressed my unhappiness to the COST Association. I will spare you the email exchange. The bottom line is that we have to find a new GH. Together with Mauro, the current GH Representative, we identified the following new GH and GH Representative:

Proposed new GH: University College Cork - National University of Ireland, Cork (Cork, Ireland)

Proposed new GH Representative: Prof. Emanuele Pelucchi

University College Cork has full capacity to act as GH. I wish to express my full gratitude to Emanuele for having accepted to act as GH Representative and to University College Cork to act as GH, if elected. And my full gratitude goes to Mauro for all the great (and very time-consuming) work he has done! He will not disappear, he still is our Deputy Chair.

The MC has to decide on this proposal for the new GH. As per rules, there are five working days to vote in favour or against it. No reply means that you approve.

I kindly ask you not to write comments about the situation that are not directly related to the eVote, triggering a chain of emails, which could annoy people in this mailing list.

Deadline for voting: Sunday 26th May 2019.

Thank you and kind regards,
Angelo

Department of Physics
Strada Costiera 11

From: Angelo Bassi bassi@ts.infn.it
Subject: COST Action CA15220: Result of eVote of 19th May 2019 - New Grant Holder (GH) and GH Representative
Date: 27 May 2019 at 10:08



To: Angelo Bassi bassi@ts.infn.it, Mauro Paternostro m.paternostro@qub.ac.uk, Rupert Ursin rupert@ursin.com, Rainer Kaltenbaek rainer.kaltenbaek@univie.ac.at, Vladyslav Usenko usenko@optics.upol.cz, Albert Roura albert.roura@uni-ulm.de, Christoph Marquardt christoph.marquardt@mpl.mpg.de, Michael Drewsen drewsen@phys.au.dk, Maciej Lewenstein maciej.lewenstein@icfo.es, Romain QUIDANT romain.quidant@icfo.es, Philippe BOUYER philippe.bouyer@institutoptique.fr, Antoine Heidmann antoine.heidmann@lkb.upmc.fr, Sabrina Maniscalco smanis@utu.fi, Gheorghe-Sorin Paroanu sorin.paroanu@aalto.fi, Lucia Hackermuller lucia.hackermuller@nottingham.ac.uk, Wolf von Klitzing wwk@iesl.forth.gr, Savvidis Ioannis i.savvidis@cmc.gov.gr, Lajos Diosi diosi.lajos@wigner.mta.hu, Géza Toth geza.toth.hu@gmail.com, Mario Stipcevic mario.stipcevic@irb.hr, Catalina Curceanu catalina.curceanu@inf.infn.it, Guglielmo Tino tino@fi.infn.it, Hagai Eisenberg hagai.eisenberg@huji.ac.il, Alexander RETZKER retzker@phys.huji.ac.il, Emanuele Pelucchi emanuele.pelucchi@tyndall.ie, Vyacheslavs Kashcheyevs slava@latnet.lv, Marcis Auzinsh Marcis.Auzinsh@lu.lv, Andre Xuereb andre.xuereb@um.edu.mt, Joakim Bergli joakim.bergli@fys.uio.no, Lars M. Johansen lars.m.johansen@hbv.no, Simon Groeblicher s.groeblicher@tudelft.nl, Yasser Omar yasser.omar@lx.it.pt, Jose Leitao jleitao@lx.it.pt, Jaroslaw Miszczak jarek@miszczak.eu, Radu Ionicioiu r.ionicioiu@theory.nipne.ro, Marius Trusculescu marius.trusculescu@spacescience.ro, boure@fysik.su.se, Jan-Åke Larsson jan-ake.larsson@liu.se, Mario Ziman ziman@savba.sk, Özgür Müstecaplıoğlu omustecap@ku.edu.tr, Humeyra Caglayan hcaglayan@bilkent.edu.tr, Andre Stefanov andre.stefanov@iap.unibe.ch, ulrik.andersen@fysik.dtu.dk, Fabian Steinlechner Fabian.Steinlechner@univie.ac.at, Nikolai Kiesel nikolai.kiesel@univie.ac.at, Jaromir Fiurasek fiurasek@optics.upol.cz, Radim Filip filip@optics.upol.cz, Erik Beckert erik.beckert@iof.fraunhofer.de, Claus Laemmerzahl claus.laemmerzahl@zarm.uni-bremen.de, Valerio Pruneri valerio.pruneri@icfo.es, Serge Reynaud serge.reynaud@upmc.fr, Astrid Lambrecht astrid.lambrecht@upmc.fr, Hendrik Ulbricht h.ulbricht@soton.ac.uk, Laszlo Bacsardi bacsardi@inf.nyme.hu, Paolo Villorosi paolo.villorosi@dei.unipd.it, David Vitali david.vitali@unicam.it, kjetil.borkje@usn.no, Markku Jaaskelainen mjk@du.se, Landragin ARNAUD arnaud.landragin@obspm.fr, Ivette FUENTES ivette.fuentes@nottingham.ac.uk, Eric Wille eric.wille@esa.int, Bruno Leone bruno.leone@esa.int, Eamonn Murphy - ESA eamonn.murphy@esa.int, Serkan Ateş serkanates@iyte.edu.tr, Humeyra Caglayan humeyra.caglayan@tut.fi, Ticijana Ban ticijana@ifs.hr, Miralem Mehic miralem@mehic.info
Cc: Fatima Bouchama fatima.bouchama@cost.eu, Cassia Azevedo Cassia.Azevedo@cost.eu, Gary Hall g.hall@qub.ac.uk

To: MC Members of the COST Action CA15220 "Quantum Technologies in Space"

Cc: Substitute Members and Observers

Gary Hall (Action's Manager)

Fatima Bouchama and Cassia Azevedo (COST Association)

Subject: Result of eVote of 19th May 2019 - New Grant Holder (GH) and GH Representative

Dear Friends and Colleagues,

I received no objection to the eVote of 19th May 2019, about the new GH and GH representative: it is unanimously approved.

Thank you and kind regards,
Angelo

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From: Angelo Bassi bassi@ts.infn.it
Subject: COST Action CA15220: Meeting with the EC in Brussels (eVote)
Date: 2 July 2019 at 19:18



To: Angelo Bassi bassi@ts.infn.it, Mauro Paternostro m.paternostro@qub.ac.uk, Rupert Ursin rupert@ursin.com, Rainer Kaltenbaek rainer.kaltenbaek@univie.ac.at, Vladyslav Usenko usenko@optics.upol.cz, Albert Roura albert.roura@uni-ulm.de, Christoph Marquardt christoph.marquardt@mpl.mpg.de, Michael Drewsen drewsen@phys.au.dk, Maciej Lewenstein maciej.lewenstein@icfo.es, Romain QUIDANT romain.quidant@icfo.es, Philippe BOUYER philippe.bouyer@institutoptique.fr, Antoine Heidmann antoine.heidmann@lkb.upmc.fr, Sabrina MANISCALCO smanis@utu.fi, Gheorghe-Sorin Paraoanu sorin.paraoanu@aalto.fi, Lucia Hackermuller lucia.hackermuller@nottingham.ac.uk, Wolf von Klitzing wvk@iesl.forth.gr, Savvidis Ioannis i.savvidis@cmc.gov.gr, Lajos Diosi diosi.lajos@wigner.mta.hu, Géza Toth geza.toth.hu@gmail.com, Mario Stipcevic mario.stipcevic@irb.hr, Catalina Curceanu catalina.curceanu@inf.infn.it, Guglielmo Tino tino@fi.infn.it, Hagai Eisenberg hagai.eisenberg@huji.ac.il, Alexander RETZKER retzker@phys.huji.ac.il, Emanuele Pelucchi emanuele.pelucchi@tyndall.ie, Vyacheslavs Kashcheyevs slava@latnet.lv, Marcis Auzinsh Marcis.Auzins@lu.lv, Andre Xuereb andre.xuereb@um.edu.mt, Joakim Bergli joakim.bergli@fys.uio.no, Lars M. Johansen lars.m.johansen@hbv.no, Simon Groeblacher s.groeblacher@tudelft.nl, Yasser Omar yasser.omar@lx.it.pt, Jose Leitao jleitao@lx.it.pt, Jaroslaw Miszczak jarek@miszczak.eu, Radu Ionicioiu r.ionicioiu@theory.nipne.ro, Marius Trusculescu marius.trusculescu@spacescience.ro, boure@fysik.su.se, Jan-Åke Larsson jan-ake.larsson@liu.se, Mario Ziman ziman@savba.sk, Özgür Müstecaplıoğlu omustecap@ku.edu.tr, Humeyra Caglayan hcaglayan@bilkent.edu.tr, Andre Stefanov andre.stefanov@iap.unibe.ch, ulrik.andersen@fysik.dtu.dk, Fabian Steinlechner Fabian.Steinlechner@univie.ac.at, Nikolai Kiesel nikolai.kiesel@univie.ac.at, Jaromir Fiurasek fiurasek@optics.upol.cz, Radim Filip filip@optics.upol.cz, Erik Beckert erik.beckert@iof.fraunhofer.de, Claus Laemmerzahl claus.laemmerzahl@zarm.uni-bremen.de, Valerio Pruneri valerio.pruneri@icfo.es, Serge Reynaud serge.reynaud@upmc.fr, Astrid Lambrecht astrid.lambrecht@upmc.fr, Hendrik Ulbricht h.ulbricht@soton.ac.uk, Laszlo Bacsardi bacsardi@inf.nyme.hu, Paolo Villorosi paolo.villorosi@dei.unipd.it, David Vitali david.vitali@unicam.it, kjetil.borkje@usn.no, Markku Jaaskelainen mjk@du.se, Landragin ARNAUD arnaud.landragin@obspm.fr, Ivette FUENTES ivette.fuentes@nottingham.ac.uk, Eric Wille eric.wille@esa.int, Bruno Leone bruno.leone@esa.int, Eamonn Murphy - ESA eamonn.murphy@esa.int, Serkan Ateş serkanates@iyte.edu.tr, Humeyra Caglayan humeyra.caglayan@tut.fi, Ticijana Ban ticijana@ifs.hr, Miralem Mehic miralem@mehic.info

To: MC Members of the COST Action CA15220 "Quantum Technologies in Space"
Cc: Substitute Members and Observers

Subject: Meeting with the EC in Brussels (eVote)

Dear Friends and Colleagues,

The European Commission is organising a meeting in Brussels on Friday 12th July to discuss the Policy White Paper on Quantum Technologies in Space, more specifically the Quantum Communication part, which was finalised during the QTSpace meeting in Munich of June 6th. The White Paper is part of QTSpace activities (<http://www.qtspace.eu/?q=whitepaper>). The official announcement of the meeting in Brussels arrived only today.

Several QTSpace members, who participated to the definition of the White Paper, have been invited. As such, I am writing for your approval to allow people to participate to the meeting as QTSpace members, with reimbursement as per standard COST rules (1 day meeting).

This new activity will not impact the other planned activities, most notably the forthcoming ESA-ESTEC workshop, as the budget allows for extra activities to be organised, as in the past years.

Deadline for voting: Tuesday 9th July 2019.

Thank you and kind regards,
Angelo

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From: Angelo Bassi bassi@ts.infn.it
Subject: COST Action CA15220: Result of eVote of 2nd July 2019 - Meeting with the EC in Brussels
Date: 10 July 2019 at 09:40



To: Angelo Bassi bassi@ts.infn.it, Mauro Paternostro m.paternostro@qub.ac.uk, Rupert Ursin rupert@ursin.com, Rainer Kaltenbaek rainer.kaltenbaek@univie.ac.at, Vladyslav Usenko usenko@optics.upol.cz, Albert Roura albert.roura@uni-ulm.de, Christoph Marquardt christoph.marquardt@mpl.mpg.de, Michael Drewsen drewsen@phys.au.dk, Maciej Lewenstein maciej.lewenstein@icfo.es, Romain QUIDANT romain.quidant@icfo.es, Philippe BOUYER philippe.bouyer@institutoptique.fr, Antoine Heidmann antoine.heidmann@lkb.upmc.fr, Sabrina Maniscalco smanis@utu.fi, Gheorghe-Sorin Paroanu sorin.paroanu@aalto.fi, Lucia Hackermuller luca.hackermuller@nottingham.ac.uk, Wolf von Klitzing wvk@iesl.forth.gr, Savvidis Ioannis i.savvidis@cmc.gov.gr, Lajos Diosi diosi.lajos@wigner.mta.hu, Géza Toth geza.toth.hu@gmail.com, Mario Stipcevic mario.stipcevic@irb.hr, Catalina Curceanu catalina.curceanu@inf.infn.it, Guglielmo Tino tino@fi.infn.it, Hagai Eisenberg hagai.eisenberg@huji.ac.il, Alexander RETZKER retzker@phys.huji.ac.il, Emanuele Pelucchi emanuele.pelucchi@tyndall.ie, Vyacheslavs Kashcheyevs slava@latnet.lv, Marcis Auzinsh Marcis.Auzins@lu.lv, Andre Xuereb andre.xuereb@um.edu.mt, Joakim Bergli joakim.bergli@fys.uio.no, Lars M. Johansen hbv.no, Simon Groeblacher s.groeblacher@tudelft.nl, Yasser Omar yasser.omar@lx.it.pt, Jose Leitao jleitao@lx.it.pt, Jaroslaw Miszczak jarek@miszczak.eu, Radu Ionicioiu r.ionicioiu@theory.nipne.ro, Marius Trusculescu marius.trusculescu@spacescience.ro, boure@fysik.su.se, Jan-Åke Larsson jan-ake.larsson@liu.se, Mario Ziman ziman@savba.sk, Özgür Müstecaplıoğlu omustecap@ku.edu.tr, Humeyra Caglayan hcaglayan@bilkent.edu.tr, Andre Stefanov andre.stefanov@iap.unibe.ch, ulrik.andersen@fysik.dtu.dk, Fabian Steinlechner Fabian.Steinlechner@univie.ac.at, Nikolai Kiesel nikolai.kiesel@univie.ac.at, Jaromir Fiurasek fiurasek@optics.upol.cz, Radim Filip filip@optics.upol.cz, Erik Beckert erik.beckert@iof.fraunhofer.de, Claus Laemmerzahl claus.laemmerzahl@zarm.uni-bremen.de, Valerio Pruneri valerio.pruneri@icfo.es, Serge Reynaud serge.reynaud@upmc.fr, Astrid Lambrecht astrid.lambrecht@upmc.fr, Hendrik Ulbricht h.ulbricht@soton.ac.uk, Laszlo Bacsardi bacsardi@inf.nyme.hu, Paolo Villorosi paolo.villorosi@dei.unipd.it, David Vitali david.vitali@unicam.it, kjetil.borkje@usn.no, Markku Jaaskelainen mjk@du.se, Landragin ARNAUD arnaud.landragin@obspm.fr, Ivette FUENTES ivette.fuentes@nottingham.ac.uk, Eric Wille eric.wille@esa.int, Bruno Leone bruno.leone@esa.int, Eamonn Murphy - ESA eamonn.murphy@esa.int, Serkan Ateş serkanates@iyte.edu.tr, Humeyra Caglayan humeyra.caglayan@tut.fi, Ticijana Ban ticijana@ifs.hr, Miralem Mehic miralem@mehic.info

To: MC Members of the COST Action CA15220 "Quantum Technologies in Space"
Cc: Substitute Members and Observers

Subject: Result of eVote of 2nd July 2019 - Meeting with the EC in Brussels

Dear Friends and Colleagues,

I received no objection to the eVote of 2nd July 2019, about the meeting with the EC in Brussels, this coming Friday: it is unanimously approved.

Thank you and kind regards,
Angelo

Department of Physics
Strada Costiera 11
34151 Miramare-Trieste
ITALY

[Email: bassi@ts.infn.it](mailto:bassi@ts.infn.it)

Web: www.qmts.it

From: Angelo Bassi abassi@units.it
Subject: COST Action CA15220: EC-ESA workshop in Brussels (eVote)
Date: 7 September 2019 at 16:20



To: Angelo Bassi bassi@ts.infn.it, Mauro Paternostro m.paternostro@qub.ac.uk, Rupert Ursin rupert@ursin.com, Rainer Kaltenbaek rainer.kaltenbaek@univie.ac.at, Vladyslav Usenko usenko@optics.upol.cz, Albert Roura albert.roura@uni-ulm.de, Christoph Marquardt christoph.marquardt@mpl.mpg.de, Michael Drewsen drewsen@phys.au.dk, Maciej Lewenstein maciej.lewenstein@icfo.es, Romain QUIDANT romain.quidant@icfo.es, Philippe BOUYER philippe.bouyer@institutoptique.fr, Antoine Heidmann antoine.heidmann@lkb.upmc.fr, Sabrina Maniscalco smanis@utu.fi, Gheorghe-Sorin Paroanu sorin.paroanu@aalto.fi, Lucia Hackermuller lucia.hackermuller@nottingham.ac.uk, Wolf von Klitzing wvk@iesl.forth.gr, Savvidis Ioannis i.savvidis@cmc.gov.gr, Lajos Diosi diosi.lajos@wigner.mta.hu, Géza Toth geza.toth.hu@gmail.com, Mario Stipcevic mario.stipcevic@irb.hr, Catalina Curceanu catalina.curceanu@inf.infn.it, Guglielmo Tino tino@fi.infn.it, Hagai Eisenberg hagai.eisenberg@huji.ac.il, Alexander RETZKER retzker@phys.huji.ac.il, Emanuele Pelucchi emanuele.pelucchi@tyndall.ie, Vyacheslavs Kashcheyevs slava@latnet.lv, Marcis Auzinsh Marcis.Auzins@lu.lv, Andre Xuereb andre.xuereb@um.edu.mt, Joakim bergli@fys.uio.no, Lars M. Johansen@hbv.no, Simon Groeblacher s.groeblacher@tudelft.nl, Yasser Omar yasser.omar@lx.it.pt, Jose Leitao jleitao@lx.it.pt, Jaroslav Miszczak jarek@mischczak.eu, Radu Ionicioiu r.ionicioiu@theory.nipne.ro, marius.trusculescu@spacescience.ro, boure@fysik.su.se, Jan-Åke Larsson jan-ake.larsson@liu.se, Mario Ziman ziman@savba.sk, Özgür Müstecaplıoğlu omustecap@ku.edu.tr, Humeyra Caglayan hcaglayan@bilkent.edu.tr, Andre Stefanov andre.stefanov@iap.unibe.ch, ulrik.andersen@fysik.dtu.dk, Fabian Steinlechner Fabian.Steinlechner@univie.ac.at, Nikolai Kiesel nikolai.kiesel@univie.ac.at, Jaromir Fiurasek fiurasek@optics.upol.cz, Radim Filip filip@optics.upol.cz, Erik Beckert erik.beckert@iof.fraunhofer.de, Claus Laemmerzahl claus.laemmerzahl@zarm.uni-bremen.de, Valerio Pruneri valerio.pruneri@icfo.es, Serge Reynaud serge.reynaud@upmc.fr, Astrid Lambrecht astrid.lambrecht@upmc.fr, Hendrik Ulbricht h.ulbricht@soton.ac.uk, Laszlo Bacsardi bacsardi@inf.nyme.hu, Paolo Villorosi paolo.villorosi@dei.unipd.it, David Vitali david.vitali@unicam.it, kjetil.borkje@usn.no, Markku Jaaskelainen mjk@du.se, Landragin ARNAUD arnaud.landragin@obspm.fr, Ivette FUENTES ivette.fuentes@nottingham.ac.uk, Eric Wille eric.wille@esa.int, Bruno Leone@esa.int, Eamonn Murphy - ESA eamonn.murphy@esa.int, Serkan Ateş serkanates@iyte.edu.tr, Humeyra Caglayan humeyra.caglayan@tut.fi, Ticijana Ban ticijana@ifs.hr, Miralem Mehic miralem@mehic.info

To: MC Members of the COST Action CA15220 "Quantum Technologies in Space"
Cc: Substitute Members and Observers

Subject: EC-ESA workshop in Brussels (eVote)

Dear Friends and Colleagues,

the European Commission and the European Space Agency jointly organize a one-day workshop in Brussels on the 30th September 2019, on "Quantum Communication Infrastructure for Europe - Space Segment". It will take place in the premises of the European Commission in Brussels (DG GROW main building). Several of you should have received a personal invitation.

The main objective of this workshop is to collect and discuss industry and research perspectives for potential space infrastructure options for various use cases together with relevant QCI (Quantum Communication Infrastructure) stakeholders, including industry, research and the user community.

Several QTSpace members will likely attend the meeting, therefore we can make it an Action's event, with the possibility of reimbursement. I suggest to allocate 20000 Eur for this event, following the standard COST reimbursement rules. We have sufficient money to cover also this activity.

I am writing for your approval. As usual, no reply means that you accept.

Deadline for voting: Saturday 14th September 2019.

Thank you and kind regards,
Angelo

Department of Physics
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Web: www.qmts.it

From: Angelo Bassi bassi@ts.infn.it
Subject: COST Action CA15220: Result of eVote of 7th September 2019 - EC-ESA workshop in Brussels
Date: 15 September 2019 at 14:26



To: Angelo Bassi bassi@ts.infn.it, Mauro Paternostro m.paternostro@qub.ac.uk, Rupert Ursin rupert@ursin.com, Rainer Kaltenbaek rainer.kaltenbaek@univie.ac.at, Vladyslav Usenko usenko@optics.upol.cz, Albert Roura albert.roura@uni-ulm.de, Christoph Marquardt christoph.marquardt@mpl.mpg.de, Michael Drewsen drewsen@phys.au.dk, Maciej Lewenstein maciej.lewenstein@icfo.es, Romain QUIDANT romain.quidant@icfo.es, Philippe BOUYER philippe.bouyer@institutoptique.fr, Antoine Heidmann antoine.heidmann@lkb.upmc.fr, Sabrina Maniscalco smanis@utu.fi, Gheorghe-Sorin Paroanu sorin.paroanu@aalto.fi, Lucia Hackermuller lucia.hackermuller@nottingham.ac.uk, Wolf von Klitzing wvk@iesl.forth.gr, Savvidis Ioannis i.savvidis@cmc.gov.gr, Lajos Diosi diosi.lajos@wigner.mta.hu, Géza Toth geza.toth.hu@gmail.com, Mario Stipcevic mario.stipcevic@irb.hr, Catalina Curceanu catalina.curceanu@inf.infn.it, Guglielmo Tino tino@fi.infn.it, Hagai Eisenberg hagai.eisenberg@huji.ac.il, Alexander RETZKER retzker@phys.huji.ac.il, Emanuele Pelucchi emanuele.pelucchi@tyndall.ie, Vyacheslavs Kashcheyevs slava@latnet.lv, Marcis Auzinsh Marcis.Auzins@lu.lv, Andre Xuereb andre.xuereb@um.edu.mt, Joakim Bergli joakim.bergli@fys.uio.no, Lars M. Johansen@hbv.no, Simon Groeblacher s.groeblacher@tudelft.nl, Yasser Omar yasser.omar@lx.it.pt, Jose Leitao jleitao@lx.it.pt, Jaroslaw Miszczak jarek@mischczak.eu, Radu Ionicioiu r.ionicioiu@theory.nipne.ro, Marius Trusculescu@spacescience.ro, boure@fysik.su.se, Jan-Åke Larsson jan-ake.larsson@liu.se, Mario Ziman ziman@savba.sk, Özgür Müstecaplıoğlu omustecap@ku.edu.tr, Humeyra Caglayan hcaglayan@bilkent.edu.tr, Andre Stefanov andre.stefanov@iap.unibe.ch, ulrik.andersen@fysik.dtu.dk, Fabian Steinlechner Fabian.Steinlechner@univie.ac.at, Nikolai Kiesel nikolai.kiesel@univie.ac.at, Jaromir Fiurasek fiurasek@optics.upol.cz, Radim Filip filip@optics.upol.cz, Erik Beckert erik.beckert@iof.fraunhofer.de, Claus Laemmerzahl claus.laemmerzahl@zarm.uni-bremen.de, Valerio Pruneri valerio.pruneri@icfo.es, Serge Reynaud serge.reynaud@upmc.fr, Astrid Lambrecht astrid.lambrecht@upmc.fr, Hendrik Ulbricht h.ulbricht@soton.ac.uk, Laszlo Bacsardi bacsardi@inf.nyme.hu, Paolo Villorosi paolo.villorosi@dei.unipd.it, David Vitali david.vitali@unicam.it, kjetil.borkje@usn.no, Markku Jaaskelainen mjk@du.se, Landragin ARNAUD arnaud.landragin@obspm.fr, Ivette FUENTES ivette.fuentes@nottingham.ac.uk, Eric Wille eric.wille@esa.int, Bruno Leone@esa.int, Eamonn Murphy - ESA eamonn.murphy@esa.int, Serkan Ateş serkanates@iyte.edu.tr, Humeyra Caglayan humeyra.caglayan@tut.fi, Tcijana Ban ticijana@ifs.hr, Miralem Mehic miralem@mehic.info

To: MC Members of the COST Action CA15220 "Quantum Technologies in Space"
Cc: Substitute Members and Observers

Subject: Result of eVote of 7th September 2019 - EC-ESA workshop in Brussels

Dear Friends and Colleagues,

I received no objection to the eVote of 7th September 2019, about the EC-ESA workshop in Brussels: it is unanimously approved.

IMPORTANT: Those of you who will participate to the workshop and wish to be reimbursed by QTSpace, please let us know via the link:

<https://doodle.com/poll/4ykdv5hn6simrezu>

in order to receive the invitation by QTSpace (not the invitation to the workshop, which is taken care by the Commission, but the invitation for reimbursement).

If the number of people exceeds the available budget, the following order of priority will be considered:

1. MC Members
2. MC Deputy Members
3. Others

Thank you and kind regards,
Angelo

Department of Physics
Strada Costiera 11
34151 Miramare-Trieste
ITALY

[Email: bassi@ts.infn.it](mailto:bassi@ts.infn.it)

Web: www.qmts.it

From: Angelo Bassi bassi@ts.infn.it
Subject: COST Action CA15220: ESA-ESTEC workshop on "QT in Space" in Noordwijk (eVote)
Date: 20 September 2019 at 14:37



To: Angelo Bassi bassi@ts.infn.it, Mauro Paternostro m.paternostro@qub.ac.uk, Rupert Ursin rupert@ursin.com, Rainer Kaltenbaek rainer.kaltenbaek@univie.ac.at, Vladyslav Usenko usenko@optics.upol.cz, Albert Roura albert.roura@uni-ulm.de, Christoph Marquardt christoph.marquardt@mpl.mpg.de, Michael Drewsen drewsen@phys.au.dk, Maciej Lewenstein maciej.lewenstein@icfo.es, Romain QUIDANT romain.quidant@icfo.es, Philippe BOUYER philippe.bouyer@institutoptique.fr, Antoine Heidmann antoine.heidmann@lkb.upmc.fr, Sabrina Maniscalco smanis@utu.fi, Gheorghe-Sorin Paroanu sorin.paroanu@aalto.fi, Lucia Hackermuller lucia.hackermuller@nottingham.ac.uk, Wolf von Klitzing wvk@iesl.forth.gr, Savvidis Ioannis i.savvidis@cmc.gov.gr, Lajos Diosi diosi.lajos@wigner.mta.hu, Géza Toth geza.toth.hu@gmail.com, Mario Stipcevic mario.stipcevic@irb.hr, Catalina Curceanu catalina.curceanu@inf.infn.it, Guglielmo Tino tino@fi.infn.it, Hagai Eisenberg hagai.eisenberg@huji.ac.il, Alexander RETZKER retzker@phys.huji.ac.il, Emanuele Pelucchi emanuele.pelucchi@tyndall.ie, Vyacheslavs Kashcheyevs slava@latnet.lv, Marcis Auzinsh Marcis.Auzins@lu.lv, Andre Xuereb andre.xuereb@um.edu.mt, Joakim Bergli joakim.bergli@fys.uio.no, Lars M. Johansen lars.m.johansen@hbv.no, Simon Groeblacher s.groeblacher@tudelft.nl, Yasser Omar yasser.omar@lx.it.pt, Jose Leitao jleitao@lx.it.pt, Jaroslaw Miszczak jarek@miszczak.eu, Radu Ionicioiu r.ionicioiu@theory.nipne.ro, Marius Trusculescu marius.trusculescu@spacescience.ro, boure@fysik.su.se, Jan-Åke Larsson jan-ake.larsson@liu.se, Mario Ziman ziman@savba.sk, Özgür Müstecaplıoğlu omustecap@ku.edu.tr, Humeyra Caglayan hcaglayan@bilkent.edu.tr, Andre Stefanov andre.stefanov@iap.unibe.ch, ulrik.andersen@fysik.dtu.dk, Fabian Steinlechner Fabian.Steinlechner@univie.ac.at, Nikolai Kiesel nikolai.kiesel@univie.ac.at, Jaromir Fiurasek fiurasek@optics.upol.cz, Radim Filip filip@optics.upol.cz, Erik Beckert erik.beckert@iof.fraunhofer.de, Claus Laemmerzahl claus.laemmerzahl@zarm.uni-bremen.de, Valerio Pruneri valerio.pruneri@icfo.es, Serge Reynaud serge.reynaud@upmc.fr, Astrid Lambrecht astrid.lambrecht@upmc.fr, Hendrik Ulbricht h.ulbricht@soton.ac.uk, Laszlo Bacsardi bacsardi@inf.nyme.hu, Paolo Villorosi paolo.villorosi@dei.unipd.it, David Vitali david.vitali@unicam.it, Kjetil Borkje kjetil.borkje@usn.no, Markku Jaaskelainen mjk@du.se, Landragin ARNAUD arnaud.landragin@obspm.fr, Ivette FUENTES ivette.fuentes@nottingham.ac.uk, Eric Wille eric.wille@esa.int, Bruno Leone bruno.leone@esa.int, Eamonn Murphy - ESA eamonn.murphy@esa.int, Serkan Ateş serkanates@iyte.edu.tr, Humeyra Caglayan humeyra.caglayan@tut.fi, Ticijana Ban ticijana@ifs.hr, Miralem Mehic miralem@mehic.info

To: MC Members of the COST Action CA15220 "Quantum Technologies in Space"
Cc: Substitute Members and Observers

Subject: ESA-ESTEC workshop on "QT in Space" in Noordwijk (eVote)

Dear Friends and Colleagues,

the 4th ESA-ESTEC workshop on "QT in Space" (2-3 October)

<https://atpi.eventsair.com/QuickEventWebsitePortal/19c15-4th-quantum-technology-workshop/website>

is coming. I remind you that on the first day (2 October), we will have our annual MC meeting, as announced (and approved by the MC) last spring when the Work Plan for the current grant period was defined. The meeting will start at 18:00; I will send you the agenda soon, it is the standard one.

I am writing for two points:

A. Reimbursement rules. I propose to use the standard COST rules, with a cap of 500 Eur on travel expenses. Exceptions are possible, subject to request to the MC chair and approval before the meeting.

B. Those of you who wish to participate and be reimbursed, please fill in the doodle

<https://doodle.com/poll/zpyaaeg6zuwf7gue>

before Wednesday 25th September. This is needed in order to optimize the budget of the event. After the deadline, you will be still entitled to take part to the meeting, but reimbursement will not be guaranteed any more.

I am writing for your approval. As usual, no reply means that you accept.

Deadline for voting: Friday 27th September 2019.

Thank you and kind regards,
Angelo

Department of Physics
Strada Costiera 11
34151 Miramare-Trieste
ITALY

Email: bassi@ts.infn.it

Web: www.qmts.it

From: Angelo Bassi bassi@ts.infn.it

Subject: COST Action CA15220: Result of eVote of 20th September 2019 - ESA-ESTEC workshop on "QT in Space" in Noordwijk

Date: 28 September 2019 at 13:31

To: Angelo Bassi bassi@ts.infn.it, Mauro Paternostro m.paternostro@qub.ac.uk, Rupert Ursin rupert@ursin.com, Rainer Kaltenbaek rainer.kaltenbaek@univie.ac.at, Vladyslav Usenko usenko@optics.upol.cz, Albert Roura albert.roura@uni-ulm.de, Christoph Marquardt christoph.marquardt@mpl.mpg.de, Michael Drewsen drewsen@phys.au.dk, Maciej Lewenstein maciej.lewenstein@icfo.es, Romain QUIDANT romain.quidant@icfo.es, Philippe BOUYER philippe.bouyer@institutoptique.fr, Antoine Heidmann antoine.heidmann@lkb.upmc.fr, Sabrina Maniscalco smanis@utu.fi, Gheorghe-Sorin Paraoanu sorin.paraoanu@aalto.fi, Lucia Hackermuller luca.hackermuller@nottingham.ac.uk, Wolf von Klitzing wvk@iesl.forth.gr, Savvidis Ioannis i.savvidis@cmc.gov.gr, Lajos Diosi diosi.lajos@wigner.mta.hu, Géza Toth geza.toth.hu@gmail.com, Mario Stipcevic mario.stipcevic@irb.hr, Catalina Curceanu catalina.curceanu@inf.infn.it, Guglielmo Tino tino@fi.infn.it, Hagai Eisenberg hagai.eisenberg@huji.ac.il, Alexander RETZKER retzker@phys.huji.ac.il, Emanuele Pelucchi emanuele.pelucchi@tyndall.ie, Vyacheslavs Kashcheyevs slava@latnet.lv, Marcis Auzins Marcis.Auzins@lu.lv, Andre Xuereb andre.xuereb@um.edu.mt, joakim.bergli@fys.uio.no, lars.m.johansen@hbv.no, Simon Groeblacher s.groeblacher@tudelft.nl, Yasser Omar yasser.omar@lx.it.pt, Jose Leitao jleitao@lx.it.pt, Jaroslaw Miszczak jarek@miszczak.eu, Radu Ionicioiu r.ionicioiu@theory.nipne.ro, marius.trusculescu@spacescience.ro, boure@fysik.su.se, Jan-Åke Larsson jan-ake.larsson@liu.se, Mario Ziman ziman@savba.sk, Özgür Müstecaplıoğlu omustecap@ku.edu.tr, Humeyra Caglayan hcaglayan@bilkent.edu.tr, Andre Stefanov andre.stefanov@iap.unibe.ch, ulrik.andersen@fysik.dtu.dk, Fabian Steinlechner Fabian.Steinlechner@univie.ac.at, Nikolai Kiesel nikolai.kiesel@univie.ac.at, Jaromir Fiurasek fiurasek@optics.upol.cz, Radim Filip filip@optics.upol.cz, Erik Beckert erik.beckert@iof.fraunhofer.de, Claus Laemmerzahl claus.laemmerzahl@zarm.uni-bremen.de, Valerio Pruneri valerio.pruneri@icfo.es, Serge Reynaud serge.reynaud@upmc.fr, Astrid Lambrecht astrid.lambrecht@upmc.fr, Hendrik Ulbricht h.ulbricht@sofon.ac.uk, Laszlo Bacsardi bacsardi@inf.nyme.hu, Paolo Villorosi paolo.villorosi@dei.unipd.it, David Vitali david.vitali@unicam.it, kjetil.borkje@usn.no, Markku Jaaskelainen mjk@du.se, Landragin ARNAUD arnaud.landragin@obspm.fr, Ivette FUENTES ivette.fuentes@nottingham.ac.uk, Eric Wille eric.wille@esa.int, Bruno Leone bruno.leone@esa.int, Eamonn Murphy - ESA eamonn.murphy@esa.int, Serkan Ateş serkanates@iyte.edu.tr, Humeyra Caglayan humeyra.caglayan@tut.fi, Ticijana Ban ticijana@ifs.hr, Miralem Mehic miralem@mehic.info



To: MC Members of the COST Action CA15220 "Quantum Technologies in Space"

Cc: Substitute Members and Observers

Subject: Result of eVote of 20th September 2019 - ESA-ESTEC workshop on "QT in Space" in Noordwijk

Dear Friends and Colleagues,

I received no objection to the eVote of 20th September 2019, about the reimbursement rules for the ESTEC workshop in Noordwijk: it is unanimously approved.

Thank you and kind regards,
Angelo

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COST Action CA15220

QTSpace: Quantum Technologies in Space

QTSPACE



5th Management Committee Meeting
Noordwijk, 2nd October 2019

Angelo Bassi – Action Chair

Verification of the presence

| COUNTRY | PRESENCE |
|----------------------|----------|
| Austria | |
| Bosnia & Herzegovina | |
| Croatia | |
| Czech Republic | |
| Denmark | |
| Finland | |
| France | |
| Germany | |
| Greece | |
| Hungary | |
| Ireland | |
| Israel | |
| Italy | |
| Latvia | |
| Malta | |
| Netherlands | |
| Norway | |
| Poland | |

| COUNTRY | PRESENCE |
|----------------|----------------|
| Portugal | |
| Romania | |
| Slovakia | |
| Spain | |
| Sweden | |
| Switzerland | |
| Turkey | |
| United Kingdom | |
| TOTAL: 26 | TOTAL PRESENT: |

| COUNTRY | PRESENCE |
|---------|---------------|
| ESA | Bruno Leone |
| ESA | Eamonn Murphy |
| ESA | Erik Wille |

The Management Committee is comprised of up to two MC Members per Participating COST Country [...]

Simple majority vote at a MC Meeting - decisions taken at MC Meetings by majority vote can only take effect if at least **two-thirds** of the Participating COST Countries **are present** and have their vote recorded - each Participating COST Country has one vote.

Agenda

1. Welcome to participants
2. Verification of the presence of two-thirds of the Participating COST Countries or, if applicable, a quorum
3. Adoption of agenda
4. Approval of minutes and matters arising of last meeting
5. Update from the Action Chair
 - a) Status of Action: start and end dates of Action, participating COST countries, participating NNC/IPC institutions and Specific Organisations.
 - b) Short Term Scientific Missions (STSM): review of completed reports and new applications
6. Update from the Grant Holder: Action budget status
7. Update from the COST Association
8. Monitoring of the Action
9. Implementation of COST policies on:
 - a) Promotion of gender balance and Early Career Investigators (ECI)
 - b) Inclusiveness and Excellence
10. Follow-up of MoU objectives: progress report of working groups
11. Scientific planning
 - a) Scientific strategy (MoU objectives, GP Goals, WG tasks and deliverables)
 - b) Action Budget Planning
 - c) Long-term planning (including anticipated locations and dates of future activities)
 - d) Dissemination planning (Publications and outreach activities)
12. Requests to join the Action from:
 - a) COST countries
 - b) Institutions in Near Neighbouring Countries, International Partner Countries, and/or Specific Organisations: EU agencies, European RTD Organisation, International Organisations
13. Preparation of the Final Report
14. AOB
15. Location and date of next meeting
16. Summary of MC decisions
17. Closing

4. Approval of minutes and matters arising of last meeting

Approval of minutes of last MC meeting

Noordwijk – 20th November 2018. Minutes sent to MC on 7th January 2019

Matters arising in last meeting

None

MC eVotes:

- 24/02/2019: WG2 meeting in Olomuc
- 10/03/2019: Workshop in Rome
- 19/05/2019: New Grant Holder (GH) and GH Representative
- 02/07/2019: Meeting with the EC in Brussels
- 07/09/2019: EC-ESA workshop in Brussels
- 20/09/2019: ESA-ESTEC workshop on "QT in Space" in Noordwijk

+ Regular updates and 4 Newsletters: 01/04/2019, 15/05/2019, 22/08/2019, 09/09/2019
(+7 in the past GPs)

5. Update from the Action Chair

a) Status of Action: start and end dates of Action, participating COST countries, participating NNC/IPC institutions and Specific Organisations

Start Date: 20th October 2016

End date: 19th October 2020

Now: middle GP4

Participating COST countries (26): Austria, Bosnia and Herzegovina, Croatia, Czech Republic, Denmark, Finland, France, Germany, Greece, Hungary, Ireland, Israel, Italy, Latvia, Malta, Netherlands, Norway, Poland, Portugal, Romania, Slovakia, Spain, Sweden, Switzerland, Turkey, United Kingdom.

Participating NNC/IPC institutions: None

Specific Organizations: ESA

5. Update from the Action Chair

b) Short Term Scientific Missions (STSM): review of completed reports and new applications

From the Work Plan

7th call for STSM out on 11th June 2019. Four collections dates

30th July 2019

30th September 2019

30th November 2019

31st January 2020

After the last collection date, if there is still available money, applications for STSMs will be dealt with based on a “first come, first served” basis, till the end of GP4 (30th April 2020).

Available budget: 4800 Eur

Cost per STSM: 800 Eur (estimated number of STSM: 6)

So far: 2 applications received, 1 approved, 1 pending.

6. Update from the Grant Holder: Action budget status

Planned – approved by MC

| Activity | Eur |
|---|----------------|
| Meetings Munich (QSN): 15.000,00 Eur Munich (CG): 6.196,00 Eur Brussels: 30.000,00 Eur Zagreb: 15.000,00 Eur ESTEC: 40.006,00 Eur | 106.202,00 Eur |
| Training School | 0,00 Eur |
| STSMs | 4.800,00 Eur |
| ITC Conference Grant | 2.000,00 Eur |
| Dissemination | 0,00 Eur |
| OERSA (Bank charges) | 41,48 Eur |
| Subtotal | 113.043,48 Eur |
| FSAC (overheads) 15% of subtotal | 16.956,52 Eur |
| TOTAL | 130.000,00 Eur |

Current status

| Activity | Eur |
|--|--------------|
| Meetings Munich (QSN): 3.214,00* Eur Munich (CG): canceled Brussels: 1.552,00* Eur ESTEC: - Zagreb: canceled Budapest: ? <i>* estimate</i> | 4.776,00 Eur |
| Training School | 0,00 Eur |
| STSMs | 800,00 Eur |
| ITC Conference Grant | 0,00 Eur |
| Dissemination | 0,00 Eur |
| OERSA (Bank charges) | 0,00 Eur |
| Subtotal | 5.566,00 Eur |

7. Update from the COST Association

None

8. Monitoring of the Action

PLUS

A large community has been reached. Coordination activities work

Strategic activities are effective (Policy White Paper + previous documents)

Collaboration with ESA

Collaboration with the QT Flagship

Ongoing discussions with the EC (DG GROW and DG CONNECT)

MINUS

Use of budget insufficient

9. Implementation of COST policies

a) Promotion of gender balance and Early Career Investigators (ECI)

Action's members (member = who registered on the Action website)

Total: 213 (ESTEC18: 184, Lisbon: 126, Malta: 48)

Male: 190 (ESTEC18: 166, Lisbon: 115, Malta: 45)

Female: 23 (ESTEC18: 18, Lisbon: 11, Malta: 3)

ECIs: 91 (ESTEC18: 81, Lisbon: 56, Malta: 10)

Core Group (Chair, Deputy Chair, WG leaders and Deputy Leaders, Manager)

Total: 11

Male: 10

Female: 1

ECIs: 3

STSMs: 2 (2 in GP1, 5 in GP2, 5 in GP3)

MoU

Gender balance. QTSpace already includes a significant representation from female scientists (in line with typical percentage in the community). The Action will ensure that female members of QTSpace take leading roles in its management. Moreover, suitable measures will be taken to facilitate the participation of female scientists to any meeting of QTSpace, whenever necessary (for example in the form of childcare facilities). Finally, the Action will liaise with any country-specific initiative for the enhancement of the participation of women in science to establish factual joint-programme for the stimulation of a balanced contribution from all genders.

Early Career Investigators (ECIs). Significant space will be given to ECIs as speakers at workshops and conferences. ii. Participation of ECIs to Action's events will be supported through targeted measures of financial support. iii. WG Vice Leaders will be selected among ECIs (or, in any case, among junior researchers). iv. In the selection of STSMs, priority will be given to ECIs.

9. Implementation of COST policies

b) Inclusiveness

Action participating countries

Total: 26

ITCs: 11

Action's Members

Total: 213 (ESTEC18: 184, Lisbon: 126, Malta: 48)

ITCs: 35 (ESTEC18: 26, Lisbon: 24, Malta: 15)

Core Group

Total: 11

ITCs: 3

Events: GP1 (100% in ITCs), GP2 (33% in ITCs), **GP3 (0% in ITCs), GP4 (0% in ITCs so far)**

As per MoU: at least 30% in ITCs

MoU

ITC participation. QTSpace will be advertised to colleagues working in ITCs to encourage their active participation in the Action, above and beyond the level of participation from such countries that have already been secured (9 countries already). Action members from ITCs will be given leading roles in the Action and at least 30% of the QTSpace events will be organized in ITCs.

Inclusiveness countries: Bosnia-Herzegovina, Bulgaria, Cyprus, Czech Republic, Estonia, Croatia, Hungary, Lithuania, Latvia, Luxembourg, Malta, Montenegro, Poland, Portugal, Romania, Slovenia, Slovakia, the former Yugoslav Republic of Macedonia, Republic of Serbia and Turkey.

9. Implementation of COST policies

b) Excellence

Major scientific actors: contacted/involved. These include:

- Scientific community (constantly growing)
- Industrial community (growing)
- ESA
- QT Flagship
- EC (DG GROW and DG CONNECT)

Strategic Report on “Quantum Technologies in Space”

<http://www.qtspace.eu/?q=strategicrep>

Participation to the writing of the “Supporting Quantum Technologies beyond H2020”

<https://qt.eu/news/working-paper-v1-1/>

NEW: Policy White Paper on QT in Space

<http://www.qtspace.eu/?q=whitepaper>

Companies

Airbus Defense & Space, OHB, Airbus, SES, Thales Alenia Space, Toptica, Single Quantum, PhotonSpot, E2V, British Telecom, Deutsche Telekom, ONERA, Lusospace, IDQ, Tekever, Embvraer, Muquans, iXBlue, e2V

10. Follow-up of MoU objectives: progress report of working groups

WG1: Fundamental science studies

→ André Xuereb

WG2: Applications

→ Rainer Kaltenbaek

WG3: Proof-of-principle experiments

→ Hendrik Ulbricht

WG4: Implementations

→ Christoph Marquardt



Rome (03/04/18): Q.
Processing of Big Data:
from Q. Computing to EO

Olomuc (11-12/04/18):
towards a Q. physics
platform in space

Bremen (15-17/04/18):
Large-Mass
Interferometry in μg

Munich (06/06/19):
Q. Meeting of the Quantum
Spaceship



Brussels (12/07/19):
Presentation of the Policy
White Paper to the EC



Brussels (30/09/19): ES-
ESA workshop of space-
QCI



ESTEC (2-3/10/19): 4th Q. Tech
Workshop, (workshop + MC)

11. Scientific planning

a) Scientific strategy (MoU objectives, GP Goals, WG tasks and deliverables)

Challenge: Develop core technologies for space applications of quantum mechanics and the understanding of the foundations of physics.

1. Identify fundamental questions to be addressed as well as the scientific/technical requirements to perform related experimental tests in space.
2. Identify possible applications of quantum technology in space, define the scientific and technical requirements.
3. Identify principles that should be demonstrated on ground, coordinate which experiments to perform.
4. Share knowledge with respect to available technologies and experimental techniques for performing experiments in space-relevant settings.
5. Identify common challenges regarding technology needs, mission parameters, mission design.
6. Technology development in international cooperation, with space agencies and with industrial partners.
7. Share experience and coordinate efforts in hardware testing in space-relevant environments (vibrations, radiation hardness, vacuum, cryogenic environment, temperature cycling, etc.).
8. Identify funding opportunities, communication with funding agencies.
9. Further broaden international support by researchers and their respective national space agencies.
10. Identify and coordinate technology-development or mission-proposal opportunities, communication with industry and space agencies.
11. Identify common ground and possible synergies.
12. Exchange know-how related to hardware testing, space-relevant proof-of-principle experiments, data acquisition and evaluation, mission design, ground-segment operation.
13. Share relevant contacts to industry, funding agencies and national agencies.

11. Scientific planning

a) Scientific strategy (MoU objectives, GP Goals, WG tasks and deliverables)

GP1 Goals

1. Identify the most relevant fundamental questions to be addressed, for space missions; initiate the discussion about the scientific/technical requirements.
2. Identify first applications of quantum technology in space; initiate the discussion about the scientific and technical requirements.
3. Initiate the discussion about principles that should be demonstrated on ground before launching a space mission.
4. Initiate the discussion about common challenges on technology needs for space missions, mission parameters, mission design, technology.

GP2 Goals

1. Identify potential industrial partners and their specific interests for quantum technologies in space
2. Identify potential applications of quantum technology in fundamental tests of physical principles in space
3. Define the state of the art of proof of principle experiment relevant for quantum experiments in space and expectations for tests needed in the near future.
4. Identify experimental ideas for implementing quantum technologies in space and define a brief guideline of implementation challenges, including the identification of the theoretical developments needed to enable such experimental endeavours.
5. Train researchers, as well as private and public sector stakeholders, interested in quantum technologies in space.

GP4 Goals

| Number | Grant Agreement Period Goal | MoU Objective(s) it relates to |
|--------|--|---|
| GAPG 1 | Coordinate the Action and engage with the different stakeholders | <ul style="list-style-type: none"> • Challenge • Secondary objective 2 • Secondary objective 4 • Secondary objective 8 • Secondary objective 9 • Secondary objective 11 • Secondary objective 13 |
| GAPG 2 | Promote Quantum Technologies in Space to the scientific community, to the space agencies, to the policy makers, to the general public. | <ul style="list-style-type: none"> • Secondary objective 4 • Secondary objective 7 • Secondary objective 9 • Secondary objective 13 |
| GAPG 3 | Promote scientific collaborations and the exchange of researchers. | <ul style="list-style-type: none"> • Secondary objective 4 • Secondary objective 5 • Secondary objective 6 • Secondary objective 12 |
| GAPG 4 | Prepare and deliver the Policy White Paper on "Quantum Technologies in Space" | <ul style="list-style-type: none"> • Challenge • Secondary objective 9 • Secondary objective 13 |
| GAPG 5 | Discuss the scientific/technical requirements for experimental tests in space using optomechanics | <ul style="list-style-type: none"> • Challenge • Secondary objective 1 • Secondary objective 2 • Secondary objective 3 • Secondary objective 4 • Secondary objective 5 • Secondary objective 6 • Secondary objective 7 • Secondary objective 9 • Secondary objective 10 • Secondary objective 11 • Secondary objective 12 • Secondary objective 13 |

White Paper
+
Munich
+
Brussels

Munich
+
Brussels

ESTEC

11. Scientific planning

a) Scientific strategy (MoU objectives, GP Goals, WG tasks and deliverables)

WG1: Fundamental Studies

TASKS

- T1.1) Evaluate tests of fundamental theories in a space environment.
- T1.2) Evaluate experimental possibilities to test fundamental theories.
- T1.3) Explore the possibility of joint space mission for the different experimental platforms.

DELIVERABLES

- D1.1) List of experiments with different physical systems [scientific paper].
- D1.2) List of fundamental tests [report].
- D1.3) List of key parameters to enable tests [technical paper].
- D1.4) Information about possible joint mission [report].

WG2: Applications

TASKS

- T2.1) Technology developments (from proof of principles to applications) with industrial partners.
- T2.2) Link to industry partners to develop enabling technologies for space experiment.
- T2.3) Investigate applications of quantum technologies outside fundamental tests.
- T2.4) Investigate the need of society and industry for QT in space.

DELIVERABLES

- D2.1) At least two identified concrete applications of QT in space [white paper].
- D2.2) List of technical requirements for each application [technical paper].
- D2.3) Two alternative paths for each realization of applications in D2.1 [technical paper].
- D2.4) Industrial partners identified with interest/need in QT in space [report].

WG3: Proof-of-Principle Experiments

TASKS

- T3.1) Define the experimental details of each envisaged test in space.
- T3.2) Check the technical availability for space approved technology.
- T3.3) Definition of outstanding proof-of-principle tests.
- T3.4) Planning of Earth-based tests: parabola flights, drop tower, sounding rockets etc.

DELIVERABLES

- D3.1) List of experimental parameters to be reached for each envisaged test [scientific paper].
- D3.2) List of status quo of technology in space [review paper].
- D3.3) Delivery of realistic time schedule for outstanding proof-of-principle tests [scientific paper].
- D3.4) Plan for strategic preparation of space missions based on experimental reality [white paper].

WG4: Implementation

TASKS

- T4.1) Identify common challenges regarding technology needs, mission parameters and design.
- T4.2) Technology development in cooperation with space agencies and industrial partners.
- T4.3) Share experience and coordinate efforts in hardware testing in space-relevant environments.
- T4.4) Further international support by researchers and their respective national space agencies.
- T4.5) Identify and coordinate technology-development and mission-proposal opportunities.

DELIVERABLES

- D4.1) List of mission parameters [report].
- D4.2) List of technology [report].
- D4.3) List of partners [report].
- D4.4) List of opportunities [white paper].

11. Scientific planning

b) Action Budget Planning

The use of GP4's budget is work in progress (impossible/unnecessary to plan everything one year ahead).

Information and eVote for future activities will be sent out in due time.

Happy to receive suggestions for future activities!

11. Scientific planning

c) Long-term planning (including anticipated locations and dates of future activities)

Workshop in Budapest (April 2020)

Plan for GP5 Period (1st May 2020 – 19th October 2020): too early

11. Scientific planning

d) Dissemination planning (Publications and outreach activities)

Website QTSpace (main activity)

- Public area: for the wider community
- Reserved area: for registered members (registration is moderated)
- Collect information for statistics and reports

Newsletters: 11 sent out so far

Publications: needs to be updated → email to Action members

Video “QTSpace: Learn from Laika the dog and Schrodinger's cat”

Check on the QTSpace website

12. Requests to join the Action

a) COST countries

No pending request

b) Institutions in Near Neighbouring Countries, International Partner Countries, and/or Specific Organisations: EU agencies, European RTD Organisation, International Organisations

No new request

13. Preparation of the Progress Report

3.1.2. GANTT Diagram (MCm = MC meeting, WGm = WG meeting, Ws = Workshop, TS = Training School, M = milestone, D = deliverable).

| Working Groups | Tasks | Year 1 | Year 2 | Year 3 | Year 4 |
|---|-------|----------|------------|----------|------------|
| WG1 Activities: 1 WGm + Ws per year. 1 TS, year 1. STSMs. | T1.1 | M1.1 | D1.1 | | |
| | T1.2 | | M1.1, D1.2 | M1.3 | D1.3 |
| | T1.3 | | | | M1.4, D1.4 |
| WG2 Activities: 1 WGm + Ws per year. 1 TS, year 2. STSMs. | T2.1 | M2.1 | D2.1 | | |
| | T2.2 | | M2.2 | D2.2 | |
| | T2.3 | | M2.3 | | D2.3 |
| | T2.4 | | | M2.4 | D2.4 |
| WG3 Activities: 1 WGm + Ws per year. 1 TS, year 3. STSMs. | T3.1 | M3.1 | D3.1 | | |
| | T3.2 | M3.2 | D3.2 | | |
| | T3.3 | | M3.3 | | D3.3 |
| | T3.4 | | | M3.4 | D3.4 |
| WG4 Activities: 1 WGm + Ws per year. 1 TS, year 4. STSMs. | T4.1 | | M4.1 | D4.1 | |
| | T4.2 | | M4.2 | | D4.2 |
| | T4.3 | | M4.3 | | D4.3 |
| | T4.4 | | | M4.4 | |
| | T4.5 | | | | D4.4 |
| Kick Off meeting | | Month 0 | | | |
| MC meetings | | Month 11 | Month 23 | Month 35 | Month 47 |
| International Action Conferences | | With MCm | With MCm | With MCm | With MCm |
| STSMs | | | | | |
| Progress & Final Report | | | Month 18 | Month 36 | Month 48 |

13. Preparation of the Progress Report

Milestones

WG1: Fundamental Studies

M1.1) Revision and definition of key experiments using photons or atoms or large particles.

M1.2) Definition of key fundamental tests to be done.

M1.3) Definition of key parameters for planned experiments.

M1.4) Definition of possible joint missions.

WG2: Applications

M2.1) Identified applications of quantum technologies in space.

M2.2) Define the technical requirements for QT in space.

M2.3) Define pathway to reach technical requirements.

M2.4) Links to industry.

WG3: Proof-of-Principle Experiments

M3.1) Definition of experiments to be done in space.

M3.2) Assessment of status quo of technological readiness for space.

M3.3) Coordination of outstanding proof-of-principle tests.

M3.4) Definition of realistic scenarios for space missions.

WG4: Implementation

M4.1) Definition of mission parameters for each envisaged mission.

M4.2) Assessment of status quo of technology and definition of further [needed] technologies.

M4.3) Definition of industrial partners to develop technology to reach mission parameters.

M4.4) Definition of mission opportunities [funding] and pathways to reach technical readiness.

13. Preparation of the Progress Report

Deliverables

WG1: Fundamental Studies

- D1.1) List of experiments with different physical systems [scientific paper].
- D1.2) List of fundamental tests [report].
- D1.3) List of key parameters to enable tests [technical paper].
- D1.4) Information about possible joint mission [report].

WG2: Applications

- D2.1) At least two identified concrete applications of QT in space [white paper].
- D2.2) List of technical requirements for each application [technical paper].
- D2.3) Two alternative paths for each realization of applications in D2.1 [technical paper].
- D2.4) Industrial partners identified with interest/need in QT in space [report].

WG3: Proof-of-Principle Experiments

- D3.1) List of experimental parameters to be reached for each envisaged test [scientific paper].
- D3.2) List of status quo of technology in space [review paper].
- D3.3) Delivery of realistic time schedule for outstanding proof-of-principle tests [scientific paper].
- D3.4) Plan for strategic preparation of space missions based on experimental reality [white paper].

WG4: Implementation

- D4.1) List of mission parameters [report].
- D4.2) List of technology [report].
- D4.3) List of partners [report].
- D4.4) List of opportunities [white paper].

14. AOB

...

15. Location and date of next meeting

Yet to be defined

Still in connection to ESA meetings? Only if before 19th October 2020 – end of the Action.

16. Summary of MC decisions

None, as we do not have the 2/3 majority

17. Closing

Many thanks to:

- The COST Association (Fatima and Cassia/Milena)
- The MC
- The CG
- ESA and EC for positive discussions and feedback
- Local organizers of the ESTEC meeting (B. Leone)

REMEMBER to sign the attendance list!!!