

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

*Lisbon, Portugal
14/09/2017*

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, 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: 25

Parties present at the meeting: Austria, Czech Republic, Denmark, France, Germany, Malta, Netherlands, Poland, Portugal, Turkey, Hungary + ESA.

Total: 11

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 2nd MC meeting (27th March, Valletta) were approved.

Between the 2nd and 3rd MC meeting, the following evotes were set up:

- 11/04/2017: Update of the GP1 Budget
- 24/04/2017: GP2 Work & Budget Plan (eCOST)
- 03/05/2017: Plan and draft of call for STSMs for GP2
- 10/05/2017: Lisbon MC meeting
- 23/05/2017: Reimbursement rules for the Lisbon meeting
- 24/05/2017: Choice of the Action's Communication Representative

(Annex II)

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**
- c) **Synergy with ESA and the QT Flagship**
- d) **Communication Representative**

Start of the Action: 20/10/2016

End of Action: 19/10/2020

Participating COST countries: Austria, 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: 25

Since the 2nd MC meeting, no new country joined the Action.

Participating NNC/IPC institutions: None

Specific Organisations: ESA – European Space Agency

STSMs. Two calls were launched on 10th May 2017 and 1st July 2017, with deadline 30th June 2017 and 30th September 2017 respectively. The allocated budget was 2400 Eur for the first call and 3200 Eur for the second call, and about 3 and 4 STSMs were foreseen for the two call, respectively. Only one application was received, having a cost of 800 Eur.

The CG group discussed and approved clearer rules for participation to STSMs, which have been implemented in the new calls.

In agreement with the CG, the Chair once again posed the problem that the STSMs tool is not working. Part of the reasons are clear: The community is new and yet not well-structured; for senior scientists the limit of at least 5 days for a STSM is too demanding – usually bilateral meetings last only a couple of days at most. However this does not fully explain why so few applications have been submitted, in particular why ECIs are not profiting from this possibility. This tool has been extensively advertised, through emails and the website, and the CG will keep advertising it.

Synergy with ESA. CG members have been included in the Scientific Programme Committee of the 2017 ESTEC (ESA) meeting in Noordwijk:

<http://old.esaconferencebureau.com/2017-events/17c16/home>

The task is to prepare a proposal for the scientific programme, to be submitted to the Local Organizing Committee. Collaboration with ESA is proceeding very well, the Chair commented.

Synergy with the QT Flagship. On 9th June 2017 a meeting was held in Munich, with Tommaso Calarco representing the QT Flagship and a selected group of people from Academia, Industry and ESA, to discuss future activities regarding QT and Space. The meeting was organized by Angelo Bassi and Mauro Paternostro (as QTSpace Chair and Deputy-Chair, respectively).

Output: Preparation of a strategic report for ESA on QT in Space, to be delivered at the November ESTEC meeting. Next, the report will be open to the scientific community for suggestions for improvement. Based on that, a final report will be prepared.

Communication Representative. The Action Chair reminded the MC of the newly created Communication Representative, as per evote of 24th May 2017.

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

Budget as approved by the MC

Meetings	73.500,00 Eur
Arcachon: 15.000 Eur	
Erlangen: 15.000 Eur	
Lisbon: 43.500 Eur	
Training School	16.500,00 Eur
STSMs	8.000,00 Eur
Dissemination	2.800,00 Eur
OERSA (Bank charges)	69,57 Eur
Subtotal	100.869,57 Eur
FSAC (overheads) 15% of subtotal	15.130,44 EuR
TOTAL	116.000,01 Eur

Current budget status

Meetings	67.740,80 Eur
Arcachon: 5.740,80 Eur	
Erlangen: 15.000 Eur	
Lisbon: 47.000 Eur	
Training School	17.515,00 Eur
STSMs	8.000,00 Eur
ITC Conference Grant	15.000,00 Eur
Dissemination	2.800,00 Eur
OERSA (Bank charges)	69,57 Eur
Subtotal	111.125,37 Eur
FSAC (overheads) 15% of subtotal	16.668,81 Eur
TOTAL (available 131.000,00 Eur)	127.794,18 Eur

The Action Chair reminded that the COST Action was given extra 15.000 Eur, which are currently allocated as "ITC conference grant". A revised budget plan will be prepared soon.

New Action Manager. As announced on 16/08/2017 Maurice Macartney has moved to a new job and thus stepped down from his role as Action Manager. Mauro Paternostro already found a replacement. His name is Gary Hall, and currently he is under training.

7. Update from the COST Association

None

8. Monitoring of the Action

The Action is progressing well, but the situation is not optimal

PLUS

- Meetings: so far as planned (Arcachon + Lisbon)
- Website: functioning and constantly updated
- Strategic Report for ESA + Collaboration for the ESTEC meeting

MINUS

- STSMs: not working

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: 126 (48)

Male: 115 (45)

Female: 11 (3)

ECIs: 56 (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: 1 (Male)

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, probably thanks to the running Lisbon Training School.

As for Inclusiveness, the situation is as follows:

Action participating countries

Total: 25

ITCs: 10

Action Members

Total: 126 (48)

ITCs: 24 (15)

(in brackets: situation at the previous MC meeting)

The Action is better and better known by the community.

Core Group

Total: 11

ITCs: 3

Events: GP1 (100% in ITCs), GP2 (33% in ITCs)

As per MoU: at least 30% in ITCs

So far, the goals of the Action are successfully met.

As for Excellence, the situation is the following:

Major scientific actors: contacted/involved

Space Agencies

- ESA (Bruno Leone, Eamonn Murphy, Eric Wille – attending the meeting)
- National Agencies: Italy, Germany, UK

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

The involvement of space agencies and industries has significantly improved with respect to the situation at the previous MC meeting.

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

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

A brief review of the WG's activities has been presented. A more extensive report will be presented at the end of the GP.

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 goals for GP2 are:

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.

The Action Chair reminded the MC about tasks and deliverables of each WG, as per MoU. The GP is only half way through, and the achievements of the goals is at a good stage.

The GP2 budget needs revision

- Meetings were cheaper than expected
- Much less STSMs than expected
- Extra money from the COST Association

Expected leftover (end of September 2017): some 30 - 35.000 Eur

After the end of the Lisbon meeting, which uses the largest share of money, we will have a clear picture of the budget.

The situation is fully under control. GP2 ends in April 2018, there is plenty of time for a proper planning.

As for future activities:

- **WG4 Meeting & Workshop:** Implementing Quantum Technologies in Space, Erlangen – Germany (already planned; it will be moved from September to December)
- Proposal for a **meeting in Belfast** (see Attachment III)

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

As for dissemination, it was suggested to interview major actors involved in quantum technologies in/for space regarding their view of the current status and future developments in the field.

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. AOB

None

14. Location and date of next meeting

Yes to be decided.

15. Summary of MC decisions

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

16. Closing

The Action Chair acknowledges support and assistance from:

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

- The MC
- The CG
- ESA (Bruno Leone, Eamonn Murphy, Eric Wille) and Airbus (Paolo Bianco)
- Local organizers of the Lisbon meeting (R. Kaltenbaek, Y. Omar, E. Murphy, J.M. Leitaó)

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
Lisbon, Portugal
14th September 2017

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
 - c) Synergy with ESA and the QT Flagship
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. AOB
14. Location and date of next meeting
15. Summary of MC decisions
16. Closing

Da: Angelo Bassi angelo.bassi@gmail.com
Oggetto: Update of the GP1 Budget (eVote)
Data: 11 aprile 2017 18:54



A: 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, 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 jleita@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, Nicolas Gisin nicolas.gisin@unige.ch, Lukas NOVOTNY Inovotny@ethz.ch, ulrik.andersen@fysik.dtu.dk

Cc: Maurice Macartney m.macartney@qub.ac.uk

To: MC Members of the COST Action CA15220 "Quantum Technologies in Space"
Cc: Maurice Macartney (Action Manager)

Subject: Update of the GP1 Budget (eVote)

Dear Friends and Colleagues,

I am writing for an update of the Budget Plan for the first Grant Period (GP1 - ending on 30th April 2017) , which is about finishing.

The budget, which you approved towards the end of last year via eVote from eCOST, was:

Activity	Eur
MC/WG meetings + Workshop (Malta)	43.690,00 Eur
STSMs	2.400,00 Eur
Dissemination (Website)	2.000,00 Eur
OERSA (Bank charges)	170,87 Eur
Subtotal	48.260,87 Eur
FSAC (overheads) 15% of subtotal	7.239,13 Eur
TOTAL	55.500,00 Eur

Given that we spent less money for STSMs with respect to what originally planned (see the minutes of the Malta MC meeting, sent to you a few minutes ago), upon suggestion of the Grant Holder I propose to reallocate the money as follows.

Activity	Eur
MC/WG meetings + Workshop (Malta)	45.460,87 Eur
STSMs	800,00 Eur
Dissemination (Website)	2.000,00 Eur
OERSA (Bank charges)	0 Eur
Subtotal	48.260,87 Eur
FSAC (overheads) 15% of subtotal	7.239,13 Eur

TOTAL

55.500,00 Eur

Essentially, all the unspent money will be used to support participants at the Malta meeting, according to the rules which were previously approved.

Deadline for voting: Tuesday 18th April 2017.

No answer means that you approve (as per COST rules).

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



Da: Angelo Bassi angelo.bassi@gmail.com
Oggetto: COST Action CA15220: Result of evote of 11th Apr 2017 - Update of the GP1 Budget
Data: 19 aprile 2017 10:12

A: 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, 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, 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, Nicolas Gisin nicolas.gisin@unige.ch, Lukas NOVOTNY Inovotny@ethz.ch, ulrik.andersen@fysik.dtu.dk

Cc: Maurice Macartney m.macartney@qub.ac.uk

To: MC Members of the COST Action CA15220 "Quantum Technologies in Space"
Cc: Maurice Macartney (Action's Manager)

Subject: Result of evote of 11th Apr 2017 - Update of the GP1 Budget

Dear Friends and Colleagues,

Yesterday was the last voting day for approving the update of the budget for the first Grant Period. I received no objections, therefore it is unanimously approved.

Soon you will receive further information relative to the forthcoming activities, which were announced during the Malta MC meeting, and which you can find summarized in the minutes, downloadable from the QTSpace website (members area).

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: Mauro Paternostro m.paternostro@qub.ac.uk
Subject: Fwd: MC voting Approves CA15220 Grant Period 2 (2017-05-01 to 2018-04-30) Work and Budget Plan
Date: 25 April 2017 at 06:27
To: Aveen Lavery a.lavery@qub.ac.uk, Maurice Macartney m.macartney@qub.ac.uk

MP

Professor Mauro Paternostro
Director of Research at the Centre for Theoretical Atomic, Molecular and Optical Physics
School of Mathematics and Physics
Queen's University Belfast
BT7 1NN
phone +44 (0)2890971928
<http://web.am.qub.ac.uk/wp/qo/m.paternostro@qub.ac.uk>

Begin forwarded message:

From: COST Association <noreply@cost.eu>
Subject: MC voting Approves CA15220 Grant Period 2 (2017-05-01 to 2018-04-30) Work and Budget Plan
Date: 25 April 2017 at 06:00:06 GMT+1
To: <m.paternostro@qub.ac.uk>

The result of the MC online vote regarding the approval of the CA15220 Work and Budget Plan for GP 2 (2017-05-01 to 2018-04-30) is: Approved.

The Voting Status can be viewed by following the link below:


<https://e-services.cost.eu/action/grants/contract/approval/9117>

The COST Association will now sign a Grant Agreement with the Grant Holder on this basis.

Best regards,

COST Association
Avenue Louise 149
1050 Brussels I Belgium
www.cost.eu

Ref: E-36.A

From: Angelo Bassi angelo.bassi@gmail.com 
Subject: COST Action CA15220: Plan and draft of call for STSMs for GP2 (eVote)
Date: 3 May 2017 at 16:13

AB

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, 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 Leitaó jleitaó@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, Nicolas Gisin nicolas.gisin@unige.ch, Lukas NOVOTNY Inovotny@ethz.ch, ulrik.andersen@fysik.dtu.dk

Cc: Maurice Macartney m.macartney@qub.ac.uk

To: MC Members of the COST Action CA15220 "Quantum Technologies in Space"
Cc: Maurice Macartney (Action Manager)

Subject: Plan and draft of call for STSMs for GP2 (eVote)

Dear Friends and Colleagues,

I am writing to ask for your approval of the plan for STSMs for the second Grant Period (May 2017 - April 2018). After discussion within the Core Group, and mainly thanks to the STSMs Manager Catalina, I propose the following plan:

1. There will be three calls, with budgets equal to 2.400 Eur, 3.200 Eur and 2.400 Eur, respectively. The total makes 8.000 Eur, as per Grant Plan, which you recently approved.
2. Deadlines for submission will be: end of June 2017, end of September 2017 and end of December 2017, respectively.

If after the third call is completed, a significant amount of money remains, we will open a fourth call, with deadline at end of February 2018, with a "first come - first served" procedure, till money allocated for STSMs is over.

Of course, all proposals for STSMs will be evaluated by the Core Group, as already agreed upon.

Attached is the draft for the first call for GP2 (second call, overall). It has been amended with respect to the previous call for GP1, taking into account the discussion we had during the Malta MC meeting.

I ask for your vote both on the plan and on the draft. As usual, tacit consent applies.

Deadline for voting: Wednesday 10th May 2017.

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



STSM-COST-2nd-year-
1call.pdf

From: Angelo Bassi angelo.bassi@gmail.com

Subject: COST Action CA15220: Result of eVote of 3rd May 2017 - Plan and draft of call for STSMs for GP2

Date: 11 May 2017 at 14:19

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 Paraoanu sorin.paraoanu@aalto.fi, Lucia Hackermuller lucia.hackermuller@nottingham.ac.uk, Wolf von Klitzing wvk@iesl.forth.gr, 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 Leita jleita@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, Nicolas Gisin nicolas.gisin@unige.ch, Lukas NOVOTNY Inovotny@ethz.ch, ulrik.andersen@fysik.dtu.dk

Cc: Maurice Macartney m.macartney@qub.ac.uk

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

Cc: Maurice Macartney (Action's Manager)

Subject: Result of eVote of 3rd May 2017 - Plan and draft of call for STSMs for GP2

Dear Friends and Colleagues,

Yesterday was the last voting day for approving the plan and draft of call for STSMs for GP2. I received no objections, therefore it is unanimously approved.

You are now kindly invited to advertise the STSM program to your colleagues, especially to the younger ones. Money is there, it should be used.

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



Da: Angelo Bassi abassi@units.it
Oggetto: COST Action CA15220: Lisbon MC meeting (eVote)
Data: 10 maggio 2017 11:29

A: Angelo Bassi bass@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, 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@hbn.no, Simon Groeblacher s.groeblacher@tueft.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, Nicolas Gisin nicolas.gisin@unige.ch, Lukas NOVOTNY Inovotny@ethz.ch, ulrik.andersen@fysik.dtu.dk

Cc: Maurice Macartney m.macartney@qub.ac.uk

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

Cc: Maurice Macartney (Action Manager)

Subject: Lisbon MC meeting (eVote)

Dear Friends and Colleagues,

you know from previous correspondence that the main activity for the next Grant Period (GP2) is the "Lisbon Training Workshop on Quantum Technologies in Space". The link to the event is: <http://qtspacetw@london.sciencesconf.org>

You can also find information on our Action's website (www.qtospace.eu), under "Activities".

Participation to the workshop is upon invitation by the organizers, and further information will be delivered soon.

Meanwhile, I have the duty to organize the next MC meeting. My original intention was to have it one year after the Malta meeting, after substantial progress has been made, but our COST Science Officer Fatima informed me that we must hold one within GP2. This is why, though it is rather early in time, we will attach it to the Lisbon meeting. The agenda will be given closer to the meeting, but I foresee that it will be the standard administrative one.

The meeting will take place on Thursday 14th September in Lisbon (as announced during the previous MC meeting), from 17:00 to 19:00. The venue is the IST (Instituto Superior Técnico).

As for the past Malta meeting, since we need to keep the budget under control, we need to know exactly and in advance, who will come and who will not. Therefore, use the doodle (please do not write me emails; answer via the doodle):

<https://doodle.com/poll/ifpq6terdb8tiwv>

to kindly tell us whether you are coming or not, as well as your arrival (max one day before) and departure (max one day after) day. Travel and living expenses will be covered, according to the rules which we will soon set up. Accommodation is for a maximum of two nights, as per COST rules.

Deadline for responses: Wednesday 17th May 2017.

No answer means that you will *not* come, or if you come, you lose your right to reimbursement.

Be also informed that you are entitled to be replaced by an MC substitute member from your country, in case you cannot attend the MC meeting. That also has to be arranged within the next week, with the same procedure described here above for the MC members.

Thank you for the collaboration and kind regards,
Angelo


PS: Please note that my email address has changed, though the old ones are still active.

Department of Physics
Strada Costiera 11
34151 Miramare-Trieste

ITALY

Email: bassi@ts.infn.it

Web: www.qmts.it

Da: Angelo Bassi abassi@units.it 
Oggetto: COST Action CA15220: Result of eVote of 10th May 2017 - Lisbon MC meeting
Data: 19 maggio 2017 10:05



A: Angelo Bassi bass@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, 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@hbn.no, Simon Groeblacher s.groeblacher@tudelift.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, Nicolas Gisin nicolas.gisin@unige.ch, Lukas NOVOTNY Inovotny@ethz.ch, ulrik.andersen@fysik.dtu.dk

Cc: Maurice Macartney m.macartney@qub.ac.uk

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

Cc: Maurice Macartney (Action's Manager)

Subject: Result of eVote of 10th May 2017 - Lisbon MC meeting

Dear Friends and Colleagues,

Wednesday was the last day for signing the doodle regarding the next MC meeting. Attached is the result. I remind you that only MC members who signed the doodle are automatically eligible for reimbursement. All other MC members (or substitutes) clearly are welcome to attend, but funding for them is not guaranteed any longer.

I also remind you that my requests/information/actions refer only to the MC meeting (Thursday afternoon, 14th September). But the Lisbon meeting is much richer and you can find all relevant information on the official website

<https://qtspacetwlisbon.sciencesconf.org>

as well as on our QTSpace website. As for typical scientific events, if you wish to participate to the other activities, please follow the instructions on the website and/or contact the organizers.

I also inform you - as announced during the Malta MC meeting - that in the next days we will launch the QTSpace newsletters. The mailing list comprises any approved person, who registered on the QTSpace website. You can find the list of "members" by clicking on "members" on the lower banner. In the future I will use the mailing list of the MC members only for the management of the Action. Scientific information will be sent via the newsletter. Therefore you should register to the QTSpace website (if not already done) if you wish to be informed.

Kind regards,
Angelo



QTSpace_Lisbo
n MC D...dle.pdf

Department of Physics
Strada Costiera 11
34151 Miramare-Trieste
ITALY
Email: bassi@ts.infn.it
Web: www.qmts.it

Poll "Lisbon MC meeting"

<https://beta.doodle.com/poll/ifpq6terdb8tiwww>

		September 2017		
		Wed 13	Thu 14	Fri 15
	Angelo Bassi	OK	OK	OK
	Catalina Curceanu			
	Albert Roura	OK	OK	OK
	Sorin Paraoanu			
	Yasser Omar	OK	OK	OK
	Sabrina Maniscalco			
	Rainer Kaltenbaek	OK	OK	OK
	André Xuereb	OK	OK	OK
	Simon Groeblacher	OK	OK	OK
	Antoine Heidmann	OK	OK	OK
	Vyacheslavs Kashcheyevs	OK	OK	OK
	Ozgur E. Mustecaplioglu	OK	OK	OK
	Lajos Diosi	OK	OK	OK
	Vladyslav Usenko	OK	OK	OK
	Jarek Mischczak	OK	OK	OK
Count		12	12	12

Comments

<https://beta.doodle.com/poll/ifpq6terdb8tiwww>

Maurice Macartney
Wednesday, May 10, 2017
8:21:25 AM GMT

Please indicate your date of arrival and departure FOR THE MC MEETING (Accommodation required for up to 2 nights).

From: Angelo Bassi abassi@units.it

Subject: COST Action CA15220: Reimbursement rules for the Lisbon meeting (eVote)

Date: 23 May 2017 at 16:45

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 Paraoanu sorin.paraoanu@aalto.fi, Lucia Hackermuller lucia.hackermuller@nottingham.ac.uk, Wolf von Klitzing wvk@iesl.forth.gr, 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, Nicolas Gisin nicolas.gisin@unige.ch, Lukas NOVOTNY inovotny@ethz.ch, ulrik.andersen@fysik.dtu.dk

Cc: Maurice Macartney m.macartney@qub.ac.uk

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

Cc: Maurice Macartney (Action's Manager)

Subject: Reimbursement rules for the Lisbon meeting (eVote)

Dear Friends and Colleagues,

as by now you well know, the big event of Grant Period 2 is the "Lisbon Training Workshop on Quantum Technologies in Space", which will take place on 11-14 September 2017 at the Instituto Superior Técnico (IST) in Lisbon. The link is <https://qtspacetwlisbon.sciencesconf.org>

The meeting consists of two activities:

1. Training School in the mornings, from Monday to Thursday.
2. Workshop in the afternoons, from Monday to Wednesday; a WG meeting on Thursday afternoon, followed by the MC meeting.

The website contains all relevant information about these activities. As for the MC meeting, I will write you again in the future. My duty here is to setup the reimbursement rules for the whole event. After discussion with the organizers, I propose the following:

1. For the Training School.

A. For Trainees.

Lump sum of 320 Eur

B. For Trainers.

1. Accommodation: 80 Eur/night for max 5 nights.
2. Meals: 20 Eur/meal as per COST rules.
3. Long Distance Travel (flights): max 400 Eur. A limited number of exceptions are possible, upon approval of the MC Chair. Please write to Rainer Kaltenbaek, in case your flight costs more, before booking the flight.
4. Local Transport: lump sum of 25 Eur. A limited number of exceptions are possible, upon approval of the MC Chair, if budget allows.

2. For the Workshop + WG2 Meeting + MC Meeting

The rules are the same as for Trainers at the Training School.

Deadline for voting: Tuesday 30th May 2017.

No reply means that you approve.

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: Maurice Macartney m.macartney@qub.ac.uk
Subject: Fwd: COST Action CA15220: Result of eVote of 23rd May 2017 - Reimbursement rules for the Lisbon meeting
Date: 5 June 2017 at 09:48
To:

MM

From: Angelo Bassi <abassi@units.it>
Subject: COST Action CA15220: Result of eVote of 23rd May 2017 - Reimbursement rules for the Lisbon meeting
Date: 01 giugno 2017 10:32:47 CEST
To: Angelo Bassi <abassi@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@lnf.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>, 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>, Nicolas Gisin <nicolas.gisin@unige.ch>, Lukas NOVOTNY <lnovotny@ethz.ch>, ulrik.andersen@fysik.dtu.dk
Cc: Maurice Macartney <m.macartney@qub.ac.uk>

To: MC Members of the COST Action CA15220 "Quantum Technologies in Space"
Cc: Maurice Macartney (Action's Manager)

Subject: Result of eVote of 23rd May 2017 - Reimbursement rules for the Lisbon meeting

Dear Friends and Colleagues,


two days ago was the last voting day for approving the reimbursement rules for the Lisbon meeting. I received no objections, therefore they are unanimously approved.

I wish to thank the organizers, in particular Rainer and Yasser, for the great work in organizing the whole event, whose program is very rich and promising. One again, the link with all relevant information is

<https://qtspacewilsbon.sciencesconf.org>

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 abassi@units.it 
Subject: COST Action CA15220: Result of eVote of 24th May 2017 - Choice of the Action's Communication Representative
Date: 1 June 2017 at 09:37

AB

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@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, Nicolas Gisin nicolas.gisin@unige.ch, Lukas NOVOTNY Inovotny@ethz.ch, ulrik.andersen@fysik.dtu.dk

Cc: Maurice Macartney m.macartney@qub.ac.uk

To: MC Members of the COST Action CA15220 "Quantum Technologies in Space"
Cc: Maurice Macartney (Action's Manager)

Subject: Result of eVote of 24th May 2017 - Choice of the Action's Communication Representative

Dear Friends and Colleagues,

yesterday ago was the last voting day for electing Laszlo Bacsardi as Action's Communication Representative. I received no objections, therefore he is elected. He we certainly be a valid help for the Action.

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: Maurice Macartney m.macartney@qub.ac.uk
Subject: Fwd: COST Action CA15220: Choice of the Action's Communication Representative (eVote)
Date: 5 June 2017 at 12:01
To:

MM

From: Angelo Bassi <abassi@units.it>
Subject: COST Action CA15220: Choice of the Action's Communication Representative (eVote)
Date: 24 May 2017 at 16:32:57 BST

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@lnf.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" <joakim.bergli@fys.uio.no>, "lars.m.johansen@hbv.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 Mischczak <jarek@mischczak.eu>, Radu Ionicioiu <r.ionicioiu@theory.nipne.ro>, "marius.trusculescu@spacescience.ro" <marius.trusculescu@spacescience.ro>, "boure@fysik.su.se" <boure@fysik.su.se>, Jan-Åke Larsson <jan-ake.larsson@liu.se>, Mario Ziman <ziman@savba.sk>, Özgür Müstecaplıoğlu <omustecap@ku.edu.tr>, Nicolas Gisin <nicolas.gisin@unige.ch>, Lukas NOVOTNY <lnovotny@ethz.ch>, "ulrik.andersen@fysik.dtu.dk" <ulrik.andersen@fysik.dtu.dk>

Cc: Maurice Macartney <m.macartney@qub.ac.uk>

To: MC Members of the COST Action CA15220 "Quantum Technologies in Space"
Cc: Maurice Macartney (Action's Manager)

Subject: Choice of the Action's Communication Representative (eVote)

Dear Friends and Colleagues,

it was announced during the Malta MC meeting (and reported in the minutes, which you can find on the QTSpace website, under the "members" area), that the COST Association is setting up a network of Actions Communication Representatives from each running Action. Attached is the email I received, informing me about the role of the Communication Representative, and asking to select a person.

Dr. Laszlo Bacsardi, MC substitute member from Hungary, volunteered for the job. Attached is a short bio, with a specific focus on the requested position. The Core Group already gave me a positive feedback. Now I am asking for your vote on this name.

Deadline for voting: Wednesday 31th May 2017.

No reply means that you approve.

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



Actions Communication
Representative.pdf

SHORT BIO

László Bacsárdi obtained M.Sc. degree in computer engineering at Budapest University of Technology and Economics (BME), Budapest, Hungary in 2006. He wrote his PhD thesis on the possible connection between space communications and quantum communications at the BME Department of Telecommunications in 2012. His current research interests are in mobile ad hoc communication, quantum computing and quantum communications.



From 2009, he works at the University of Sopron, Hungary (formerly known as University of West Hungary). Currently, he is Associate Professor and the Head of the Institute of Informatics and Economics. As an Adjunct Assistant Professor, he is member of faculty at the Department of Networked Systems and Services, BME as well.

Dr. Bacsárdi is the Secretary General of the Hungarian Astronautical Society (MANT), which is the oldest Hungarian non-profit space association founded in 1956. He is member of the board of a Hungarian scientific newspaper ('World of Nature') and he is the publisher of a non-profit Hungarian space news portal ('Space World'). Furthermore, he is member of Institute of Electrical and Electronics Engineers (IEEE), the American Institute of Aeronautics and Astronautics (AIAA) and the Scientific Association for Infocommunications Hungary (HTE---an IEEE and IEEE ComSoc sister society). He has joined the Space Generation Advisory Council (SGAC) and served as the Hungarian National Point of Contact between 2012-2016. As a member of SGAC's Executive Office, he is currently active as Regional Events Coordinator.

He is member of two committees of the International Astronautical Federation (IAF): IAF Space Communications and Navigation Committee and the IAF Space Societies Committee. Moreover, Dr. Bacsárdi is substitute management committee member of the COST Action CA15220 Quantum Technologies in Space which is a four-year-long European research action started in 2016. He has more than 80 publications.

Selected media and science communication experiences:

- In 2004, he successfully completed a 3-month-course on scientific journalism. After the course, he became member of the Club of the Hungarian Scientific Journalist.
- He became member of the editorial board of the Termesztudományok (World of Nature) in 2002, a Hungarian scientific journal for the general public.
- He became editor of the Hungarian Urvilág (Space World) online newsportal in 2002, and he is the responsible publisher since 2007. The mission of the 15-year-old portal is showing the impact of space on our everyday's life. For this, every day minimum one article is published – and this is a big number considering the fact that the portal is run on voluntary basis.
- He was the editor-in-chief of the Impulzus, a student paper by the Faculty of Electrical Engineering and Informatics at the Budapest University of Technology and Economics between 2003-2005. He was the president of the Press Club of the Budapest University Technology and Economics between 2005 and 2009.
- He was the scientific editor of the THE newsportal, a scientific portal for primary and secondary school students (between 2008 and 2010).
- He helped to create content for many webpages and Facebook pages as well as different national and international press releases.
- He is the editor of the Hungarian "Adventures of the Quantum Bit" Facebook-page, available at <http://facebook.com/kvantumbit> (Hungarian only).

From: **Fatima Bouchama** Fatima.Bouchama@cost.eu
Subject: Actions Communication Representative
Date: 11 maggio 2017 10:55
To: Fatima Bouchama Fatima.Bouchama@cost.eu

FB

Dear Action Chair,

I have been asked to communicate to all running Actions the message below from our Communication Department:

*Our communications department here at the COST Association is committed to helping you share your Action's activities and success. This is why we are setting up **a network of communications representatives** from each running Action. If not done yet, we would like your network to select one of its members for this role. Ideally, the person should have a basic understanding of digital communications channels/be active on social media, and have a general interest in science communication and/or science journalism.*

***If there is already in your network a member in charge of Dissemination, please send us your colleague's name as soon as possible.
If not, we kindly ask you to please proceed with the selection of one member for this role and send us the name of the member appointed by latest 16/06/2017.***

We encourage your colleague to stay in touch with our Communications Officer, Silvia Alexe (Silvia.Alexe@cost.eu), about the Action's communications activities or plans/ideas (events, interviews, media relations, press releases, success stories etc.). Together with her team, she will be helping you share your activities and results. This way you can reach and engage with your audiences, be those policy makers, journalists, industry representatives, educators, citizens or your own peers in other (similar) Actions. Silvia and her team will also organise trainings on media relations and science communications.

Communicating about activities throughout the Action's lifetime – and not just at the end – boosts the network's visibility and helps decision makers understand the importance of the network. This is particularly important given the recent budget cuts that affected COST Actions. Last month, some Action participants had the chance to talk to the EU Commissioner for Research and Innovation, Carlos Moedas, about their Actions' impact on their own career and research. This is just one example of how important it is to share the Action's outputs.

Please contact directly our communication officer, Silvia, should you have any question.

Thank you,

Kind regards,

Fatima

Dr. Fatima Bouchama

Science Officer

COST Association | Avenue Louise 149

1050 Brussels | Belgium

Tel: +32 (0) 2 533 38 32 | Fax: +32 (0) 2 533 38 90

Fatima.Bouchama@cost.eu | www.cost.eu

*Please Note: The information transmitted, including attachments, is intended only for the **person(s)** or **entity** to which it is addressed and may contain confidential and/or privileged material. Any review, retransmission, dissemination or other use of, or taking of any action in reliance upon this information by persons or entities other than the intended recipient is prohibited. If you received this in error, please contact the sender and destroy any copies of this information.*

COST Action CA15220

QTSpace: Quantum Technologies in Space

3rd Management Committee Meeting
Lisbon, 14th September 2017

Angelo Bassi – Action Chair

COUNTRY	PRESENCE
Austria	
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: 25	TOTAL PRESENT:

Verification of the presence

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
 - c) Synergy with ESA and the QT Flagship
 - d) Communication Representative
6. Update from the Grant Holder: Action budget status and new Action Manager
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. AOB
14. Location and date of next meeting
15. Summary of MC decisions
16. Closing

4. Approval of minutes and matters arising of last meeting

Approval of minutes of last MC meeting

Malta – 27th March 2017

Minutes sent to MC on 11th April 2017

Matters arising in last meeting

None

MC eVotes:

- 11/04/2017: Update of the GP1 Budget
 - 24/04/2017: GP2 Work & Budget Plan (eCOST)
 - 03/05/2017: Plan and draft of call for STSMs for GP2
 - 10/05/2017: Lisbon MC meeting
 - 23/05/2017: Reimbursement rules for the Lisbon meeting
 - 24/05/2017: Choice of the Action's Communication Representative
- + Regular updates and 1 Newsletter (24/05/2017)

All documents have been uploaded on the Action's website

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: 20 October 2016

End date: 19 October 2020

Participating COST countries (25): Austria, 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

Three calls planned, with deadline end of June, September, December 2017 + possibility of 4th call with no deadline if significant leftover budget

Available budget: $2400 + 3200 + 2400 = 8000\text{Eur}$

Cost per STSM: 800 Eur (estimated number of STSM: $3 + 4 + 3$)

Only one application received (R. Kaltenbaek) – for Southampton

Critical points

- Only one application received, out of 10 we estimated

Actions to take

- Improve advertisement → Catalina's presentation

Improvements

- Rules for approval have been clarified

5. Update from the Action Chair

c) Synergy with ESA and the QT Flagship

ESA. CG members have been included in the Scientific Programme Committee of the 2017 ESTEC (ESA) meeting in Noordwijk. The role is to prepare a proposal for the scientific programme, to be submitted to the Local Organizing Committee

➔ Collaboration with ESA is good

2nd Quantum Technology - Implementations for Space Workshop

14-15 November 2017
ESA/ESTEC, The Netherlands



Committee

Workshop Chairs

José Gavira Izquierdo
Zoran Sodnik

Head, Mechatronics and Optics Division, ESTEC
Head, Opto-electronics Section, ESTEC

Local Organising Committee

Bruno Leone
Linda Mondin
Eamonn Murphy
Christoph Volland
Eric Wille

Opto-electronics Section, ECSAT
Opto-electronics Section, ESTEC
Opto-electronics Section, ESTEC
Opto-electronics Section, ESTEC
Optics Section, ESTEC

Scientific Programme Committee

Angelo Bassi
Philippe Bouyer
Luigi Cacciapuoti
Olivier Carraz
Simon Gröblacher
Astrid Heske
Rainer Kaltenbaek
Christoph Marquardt
Alexander Mudrak
Yasser Omar
Mauro Paternostro
Hendrik Ulbricht
Vladyslav Usenko
André Xuereb

University of Trieste, COST QTSpace Chair
Institut d'Optique, COST QTSpace
Science Support Office, ESTEC
Future Missions & Instrument Division, ESTEC
Delft University of Technology, COST QTSpace
Payload Instruments Section, ESTEC
University of Vienna, COST QTSpace
MPL, COST QTSpace
Galileo GS Procurement Office, ESTEC
University of Lisbon, COST QTSpace
Queen's University Belfast, COST QTSpace Vice Chair
University of Southampton, COST QTSpace
Palacky University, COST QTSpace
University of Malta, COST QTSpace

You all should have received the invitation to participate (sent on 12/09/2017)

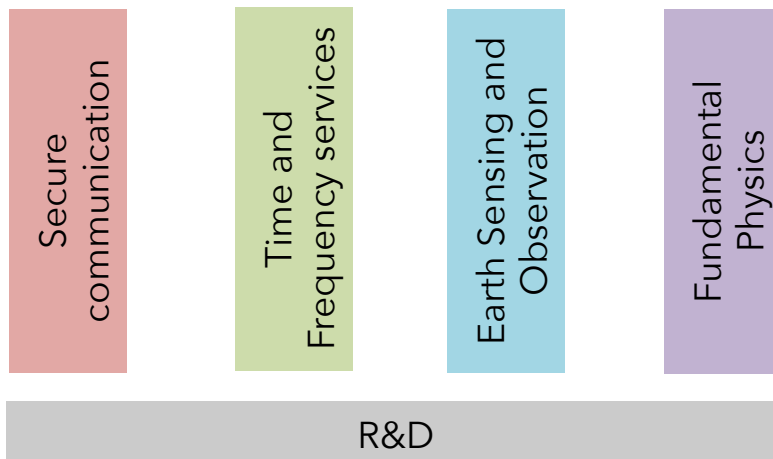
5. Update from the Action Chair


c) Synergy with ESA and the QT Flagship

QT Flagship. On 9th June 2017 we had a meeting in Munich with Tommaso Calarco representing the QT Flagship and a selected group of people from Academia, Industry and ESA, to discuss about QT and Space. The meeting was organized by Angelo and Mauro (as QTSpace).

Output: Preparation of a strategic report for ESA on QT in Space

The following structure was defined



 **2nd Quantum Technology - Implementations for Space Workshop**
14 - 15 November 2017
European Space Agency

Topics

The following session topics have been identified:

I. Applications

- Earth and Planetary remote sensing
- Time and frequency distribution
- Communications—including satellite (quantum) networks
- Fundamental Physics

II. Programmatics

- Commercialisation
- Policy

5. Update from the Action Chair

c) Synergy withy ESA and the QT Flagship

1. Teams have been formed for each pillar
2. The following team leaders have been identified
Secure communications: Paolo Villoresi
Time and Frequency: Stephan Schiller
Earth sensing and Observation: Philippe Bouyer
Fundamental Physics: Hendrik Ulbricht
R&D: Christoph Marquardt
3. A first draft will be presented at the ESTEC meeting in November (tentative plan)
4. Then the draft will be open to the entire community for comments/improvements
5. Based on the comments, a final draft will be prepared

5. Update from the Action Chair

d) Communication Representative

New figure in COST: *“Our communications department here at the COST Association is committed to helping you share your Action’s activities and success. This is why we are setting up **a network of communications representatives** from each running Action. If not done yet, we would like your network to select one of its members for this role. Ideally, the person should have a basic understanding of digital communications channels/be active on social media, and have a general interest in science communication and/or science journalism.*

Dr. Laszlo Bacsardi
MC Substitute from Hungary, was chosen with MC eVote
on 24/05/2017



6. Update from the Grant Holder: Action budget status

Planned – approved by MC

Activity	Eur
Meetings Arcachon: 15.000 Eur Erlangen: 15.000 Eur Lisbon: 43.500 Eur	73.500,00 Eur
Training School	16.500,00 Eur
STSMs	8.000,00 Eur
Dissemination	2.800,00 Eur
OERSA (Bank charges)	69,57 Eur
Subtotal	100.869,57 Eur
FSAC (overheads) 15% of subtotal	15.130,44 Eur
TOTAL	116.000,01 Eur

Current status

Activity	Eur
Meetings Arcachon: 5.740,80 Eur Erlangen: 15.000 Eur Lisbon: 47.000 Eur	67.740,80 Eur
Training School	17.515,00 Eur
STSMs	8.000,00 Eur
ITC Conference Grant	15.000,00 Eur
Dissemination	2.800,00 Eur
OERSA (Bank charges)	69,57 Eur
Subtotal	111.125,37 Eur
FSAC (overheads) 15% of subtotal	16.668,81 Eur
TOTAL (available 131.000,00 Eur)	127.794,18 Eur

6. Update from the Grant Holder: New Action Manager

As announced on 16/08/2017 Maurice Macartney has moved to a new job and thus stepped down from his role as Action Manager. Mauro Paternostro already found a replacement. His name is Gary Hall, and currently he is under training.

7. Update from the COST Association

None

8. Monitoring of the Action

Things are going well, but are not optimal

PLUS

Meetings: so far as planned (Arcachon + Lisbon)

Website: constantly updated

Strategic Report for ESA + Collaboration for the ESTEC meeting

MINUS

STSMs: not working

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: 126 (48)

Male: 115 (45)

Female: 11 (3)

ECIs: 56 (10)

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

Total: 11

Male: 10

Female: 1

ECIs: 3

STSMs: 1 (Male)

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

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

Gender Balance.

Not tragic: 11 out of 126 members are female

More needs to be done.

Talks of our STSM manager & COST Mission and Policies Supervisor Catalina on the role of women in science

ECIs. Things are going well.

In general. The Action is getting known by the community

9. Implementation of COST policies

b) Inclusiveness

Action participating countries

Total: 25

ITCs: 10

Action's Members

Total: 126 (48)

ITCs: 24 (15)

Core Group

Total: 11

ITCs: 3

Events: GP1 (100% in ITCs), GP2 (33% in ITCs)

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

Space Agencies

- ESA (Bruno Leone, Eamonn Murphy, Eric Wille) → Strategic Report
- National Space Agencies (Italy, Germany, ...)

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

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.

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

WG1. ➔ André Xuereb

WG2. Lisbon meeting. ➔ Rainer Kaltenbaek

WG3. Arcachon meeting. Working towards the deliverables of WG3 and to define the next proof of principle test for space missions with three different physical platforms (cold atoms [clocks and interferometers], quantum communication [photons], large particle matterwave interferometry and optomechanics). The first two milestones of WG3 are to *define the important experiments* to be done in space [with input from WG1 and WG2] and to *assess the technology readiness levels [TRLs]* for each platform.

WG4. Discussion with space industry about realization of quantum technology in space. Particular about requirements in space qualification and manufacturing. Identified the need to help partners from academia with finding their „match“ in industry. Possibly: offer list of space companies with different possibilities / testing grounds on web site.

I can second otherwise the statements of Rainer about ESAs proposal of possible integration facilities.

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.

MALTA MEETING + Report (in Progress)

GP2 Goals

1. Identify potential industrial partners and their specific interests for quantum technologies in space
→ **In progress; it will be part of a report**
2. Identify potential applications of quantum technology in fundamental tests of physical principles in space → **In progress; it will be part of a report**
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. → **Arcachon meeting**
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.
→ **In progress; it will be part of a report**
5. Train researchers, as well as private and public sector stakeholders, interested in quantum technologies in space. → **Lisbon meeting**

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 GP2 budget needs revision

- Meetings were cheaper than expected
- Much less STSMs than expected
- Extra money from the COST Association

Expected leftover (end of September 2017): some 30 - 35.000 Eur

After the end of the Lisbon meeting, which uses the largest share of money, we will have a clear picture of the budget.

No problem. GP2 ends in April 2018, there is plenty of time for planning

11. Scientific planning

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

WG4 Meeting & Workshop: Implementing Quantum Technologies in Space
Erlangen – Germany (already planned; September → December)

Proposal for a **meeting in Belfast** (see next slide)

Other WG meeting?

Plan for GP3 Period (May 2018 – April 2019): too early

11. Scientific planning

Aim. The Royal Irish Academy, in collaboration with Queen's University Belfast, organises every year the “John Bell Day”, which celebrates the life and work of John Bell. This year, the goal of the event is to address the widest panorama of quantum technologies, which have benefited enormously of the seminal work of John Bell. The idea is to have a scientific talk centered on a topic relevant to the themes addressed by Bell (this year this would be a talk by Toni Acin [ICFO Barcelona] on quantum cryptography), accompanied by a general public-oriented panel-like discussion on quantum technologies technologies.

The panel will comprise 4 pillars:

- Communication
- Simulation & Computing
- Cybersecurity & Machine learning
- Technologies for space

The aim is to have both companies and scientists interested in the areas above and stimulate the cross-fertilisation of ideas and, possibly, furthering investments in the broad area of quantum tech.

Tentative date: around 4th November



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
- Newsletter service (create an “official” communication channel)

Publications: needs to be implemented → email to Action members
But already implemented on the Action website.

“State of the art” in QTSpace: output of Malta meeting, in preparation.

Article about WG1 themes (S. Gröblacher, M. Paternostro, A. Xuereb)

Public lecture about QT in Space (2018 Malta - A. Xuereb) + talks by Catalina

12. Requests to join the Action

a) COST countries

Still via CNC

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

No new request

13. AOB

...

14. Location and date of next meeting

Yet to be defined

IDEA: In connection to ESA meetings?

15. Summary of MC decisions

...

16. Closing

Many thanks to:

- The COST Association (Fatima and Cassia)
- The MC
- The CG
- ESA (Bruno Leone, Eamonn Murphy, Eric Wille) and Airbus (Paolo Bianco)
- Local organizers of the Lisbon meeting (R. Kaltenbaek, Yasser Omar, E. Murphy, J.M. Leitao)

REMEMBER to sign the attendance list.