TEQ Steering Committee Meeting

Trieste – 16th September 2019

MINUTES

1. Welcome by the SC Chair and adoption of the agenda

   The members present at the Meeting are:

UniTS	A. Bassi, I. Spagnul
INFN	K. Piscicchia (replacing C. Curceanu)
UCL	P. Barker
QUB	L. Mancino (replacing M. Paternostro)
AU	M. Drewsen
UoS	H. Ulbricht
M2	J. Bain (teleconference)

The chair presents the agenda as follows.

1. Welcome to the SC members and adoption of agenda
2. Overview over project progresses in 2019
3. Budget breakdown and critical issues
4. Deliverables due by the end of 2019 and by the end of Reporting Period 2, Milestones
5. Discussion on dissemination: potential information material about the project and video
6. Review of the recruitment plan
7. Next SC meeting
8. AOB
9. Brief scientific report from each partner and open discussion
10. Closing

The agenda was adopted by the SC members.

2. Overview over project progresses in 2019

The Chair recaps the past TEQ SC meetings and TEQ official meetings.

- SC meeting: 25th February 2019 (Brussels, BE)
- WG meeting: 31st May 2019 (Frascati, IT)
- WG meeting: 24th July 2019 (London, UK)
- Workshop + SC meeting: 16th – 19th September 2019 (Trieste, IT)
- WG meeting: 19th September 2019 (Trieste, IT)

The Chair presents the Dissemination and Communication activities so far implemented by the Consortium and described on the TEQ Website: publications and preprints, talks, press releases, newsletters, press articles, multimedia. The Chair confirms that the numbers show that the work is going on very well – the number of publications and preprints are well ahead, trending to exceed the numbers of 2018. The Chair goes also through the news and awards of the members of the TEQ consortium (section "News" on the Website).

3. Budget breakdown and critical issues

The Chair goes through the budget breakdown (situation as reported in the RP1) and highlights the remarks raised by the Commission. The budget is under control and constantly monitored by the partners

4. Deliverables due by the end of 2019 and by the end of Reporting Period 2, Milestones

The partners discuss on the deliverables that are due by the end of December 2019 (month24).

TUD (D3): discussion on the main aspects of the Deliverable D3 among the partners.

AU (D1): discussion on the main aspects of the Deliverable D1 among the partners.

QUB (D16): discussion on the main aspects of the Deliverable D16 among the partners.

UNITS (D26 and D27): discussion on the main aspects of the Deliverables among the partners. The D26 (Videos) deadline was moved, in accordance with the PO, from August 31 to December 31 to be able to collect video material during the September workshop in

Trieste.

The partners then discuss on the deliverables that are due by the end of June 2020 (month30) – end of Reporting Period 2:

Southampton (D7 and D11): discussion on the main aspects of the Deliverables D7 and D11 among the partners. More scientific discussion on this is postoponed to the WG meeting on TEQ experiment on September 19.

The Chair reminds the partners to use the Deliverable template available on the TEQ Website (Communication kit).

The Chair reminds also that on Month24 of the project there is a Milestone to achieve:

MS2 – NC Trapping (WP1 – AU partner): NC trapping in low noise environment. Means of verification: measurement of temperature of NCs.

The Chair also reminds that the Reporting Period 2 ends on June 2020; the reports are due to the EC by 31st August 2020. The partners discuss whether the Review Meeting will be planned as last time or differently. The Chair will inquire with the PO.

5. Discussion on dissemination: potential information material about the project and video

The Chair presents to the partners the idea of developing information material about the project (i.e. flipping book) for dissemination and fundraising purposes. Discussion goes on whether is it needed or useful and what target could the material aim at.
Partners agree that some material will be useful and will help to inform the public and potential funding agencies about the project. Partners agree to develop a digital small booklet with description of the partners, of the different parts of the project, videos and photos and all logos. Irene will start collecting material in the coming months. Partners agree the material should be ready by the end of Reporting Period 2.

The Chair presents the ongoing work for the preparation of the Deliverable26 (Video) in which all partners are already involved: the video maker was contracted, the storyboard is ready, interviews will be recorded on Wednesday 18th in Trieste, videos sent from partners are being viewed and they will be integrated in the video. Partners are ready to record some other footages if needed.

Partners suggest to use some of the videos from the labs for advertising the project (posting them on the TEQ website).

6. Review of recruitment plan

The plan is being implemented as agreed by all partner. AU confirms that the contracting

of a postDoc is running a bit late but PhD is fully contracted for a year. Other positions are kept for the rest of the project. The rest is under control.

Partners are asked to send updates to the Coordinator if needed.

7. Next meeting

Partners discuss about the opportunity to convey the SC before the end of Reporting Period 2. Partners suggest to meet in Aarhus around May 2020.

8. AOB

No AOB

9. Scientific discussion

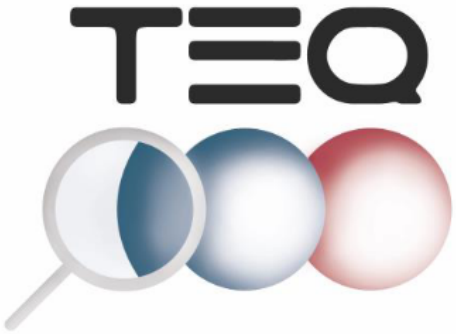
The scientific discussion is postponed to September 19 at the WG meeting on TEQ experiment, taking place after the Workshop at the same premises. Hendrik Ulbricht (Southampton) updates on the newly installed cryostat that was updated by the supplier. Magnetic levitation almost ready to go. End October/November it could be tested. Loading and detection are the two things to do next.

10. Closing

Angelo Bassi, Chair, wraps up the discussion on management issues and thanks everyone for the hard work and the fruitful collaboration.

ANNEX: TEQ_Trieste_SC_Meeting_Chair (presentation Angelo Bassi , Chair)

Testing the large-scale limit of quantum mechanics



Steering Committee Meeting

Trieste 16th September 2019

Angelo Bassi - Chair

1. Welcome and adoption of agenda

Angelo Bassi - UniTs & chair
Catalina Curceanu – INFN
Peter Barker – ULC
Mauro Paternostro – QUB
Liberato Manna – TUD
Michael Drewsen – AU
Hendrik Ulbricht – UoS
Caslav Brukner– OEAW
James Bain – Msquared

Agenda of SC Meeting

AGENDA

1. Welcome to the SC members and adoption of agenda

2. Overview over project progresses in 2019

3. Budget breakdown and critical issues

4. Deliverables due by the end of 2019 and by the end of Reporting Period 2, Milestones

5. Discussion on dissemination: potential information material about the project and video

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2. Overview over project progresses in 2019

SC meetings and project meetings

SC meeting: 25th February 2019 (Brussels, BE)

WG meeting: 31st May 2019 (Frascati, IT)

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WG meeting: 19th September 2019 (Trieste, IT)

2. Overview over project progresses in 2019

communication and dissemination activities

	2018	2019 (Sept)
Publications+Preprints	22+29	21+27
Talks	54	64
Press Releases	3	/
Newsletters	3	2 (2 to be published)
Press Articles	18	3 (+1)
Multimedia	1	1

2. Overview over project progresses in 2019

news and awards

TEQ experiment paper in PRA with editors' suggestion
and in Featured in Physics with a news story

Prof Mauro Paternostro awarded by Royal Society

Dr Curceanu wins a Fundamental Physics Innovation Award

3. Budget breakdown and critical issues

Partner	Total costs ESTIMATED (48 M)	Total costs REPORTED (12 M)	% Total costs reported	PMs estimated (48 M)	PMs reported (12 M)	% PMs on total
UniTs	621 260,00	100 072,51	16,10%	115	29.80	25,91 %
AU	515 625,00	19 017,10	3,68%	57	11.53	20,22 %
INFN	384 375,00	47 412,21	12,33%	61	4.89	8,01 %
OEAW	372 375,00	80 691,83	21,66%	73	17.84	24,43 %
QUB	442 198,75	71 734,23	16,22%	79.20	16.80	21,21 %
TUDelft	393 840,00	58 081,16	14,74%	57	7.86	13,78 %
UCL	518 996,25	201 727,50	38,86%	56.60	8.87	15,67 %
Soton	727 991,25	148 810,30	20,44%	57	14	24,56 %
M2	394 812,50	377 702,40	95,66%	48	34.39	71,64 %
Total	**4 371 473,75**	**1 105 249,00**	**25,28%**	**603.80**	**156.54**	**25,92 %**

4. Deliverables due by the end of the year

WP No	Del Rel.	Del No	Title	Description	Lead Benefici	N	Dissemin	Est. Del	Re	Re	Ap	Status	
WP6	D6.3	D26	Videos	Video-abstracts of relevant publications, video...	UNITS		Public	31 Aug 2019				Pending	
WP1	D1.1	D1	Rf trap for NCs	Commission of an rf trap for NCs with electrica...	AU		Publi	31 Dec 2019				Pending	
WP1	D1.3	D3	2-Colloidal NCs	NCs of controlled size/shape/composition & impr...	TU Delft		Publi	31 Dec 2019				Pending	
WP4	D4.3	D16	Size of superposition	Design of experimental schemes for the quantifi...	QUB		Public	31 Dec 2019				Pending	
WP6	D6.4	D27	Workshop	Workshop "Redefining the foundations of physics...	UNITS		Public	31 Dec 2019				Pending	
WP2	D2.2	D7	Optimal cooling strategies	Identification of optimal cooling strategies fo...	SOUTHAMP		Public	31 Mar 2020				Pending	
WP3	D3.2	D11	Systematic effects investiga	Systematic effects are investigated	SOUTHAMP		Public	30 Apr 2020				Pending	
WP5	D5.4	D22	Project Review meeting doc	Technical/scientific report, outcome of the Pro...	UNITS		Confide	31 Aug 2020				Pending	
WP1	D1.4	D4	Loading and control device	Construct particle loading and charge control d...	UCL		Public	31 Dec 2020				Pending	
WP1	D1.5	D5	Quantification of heating	Quantification of relevant heating mechanisms l...	QUB		Public	31 Dec 2020				Pending	
WP4	D4.4	D17	Bounds to the ecCSL model	Provision of bounds on the effects of energy-co...	UNITS		Public	31 Dec 2020				Pending	
WP2	D2.3	D8	Internal state cooling	Demonstration of internal state cooling and eva...	UCL		Public	28 Feb 2021				Pending	
WP3	D3.3	D12	Ultimate experiment	The ultimate experiment assembled and performed	SOUTHAMP		Public	30 Apr 2021				Pending	
WP2	D2.4	D9	Quantify decoherence	Quantitative understanding of decoherence and h...	QUB		Public	31 Aug 2021				Pending	
WP4	D4.5	D18	Time-dilation/gravity collap	Quantitative comparison between time-dilation d...	OEAW		Public	31 Aug 2021				Pending	

4. Deliverables due by the end of Reporting Period 2

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4. Milestones

Milestone number[18]	Milestone title	WP number[9]	Lead beneficiary	Due Date (in months)[17]	Means of verification
MS1	Preparation of NCs	WP1	2 - AU	12	Preparation of NCs with minimum absorption & stable against aggregation. Means of verification: Combination of optical, electron microscopy, and surface analysis methods
MS2	NC-Trapping	WP1	2 - AU	24	NC-Trapping in low-noise environment. Means of verification: Measurement of temperature of NCs
MS3	Cooling	WP2	7 - UCL	36	Cooling of internal and centre-of-mass (CoM) degrees of freedom of a charged NC Means of verification: Changes in the line shape of the mechanical CoM and cooling transition
MS4	New tests for collapse models	WP4	5 - QUB	36	New tests for the energy-conserving CSL model (ecCSL) and for the Schrödinger-Newton equation (SN). Means of verification: Rigorous modelling of non-interferometric tests for ecCSL and SN
MS5	The final experiment	WP3	8 - SOUTHAMPTON	42	Experimental test of the quantum superposition principle. Means of verification: Observation of broadening of mechanical spectral line.
MS6	Quantum & Gravity	WP4	5 - QUB	48	Time dilation decoherence & gravity-induced collapse. Means of verification: Connection between time dilation decoherence and gravity-induced collapse

Reminder:
Reporting Period 2 ends June 2020
the reports are due to the EC
31st August 2020

5. Discussion on dissemination

- Potential information material about the project: **flipping book**

  Decision of the Consortium: will it be useful?

- TEQ video: contracted video maker, first draft of storyboard ready, interviews are recorded on Wednesday 18th

  More videos from partners?

6. Review of recruitment Plan

Last live update
at the SC meeting in Delft
9th November 2018

7. Next SC meeting

Where: ?

When: March/April 2020

Following SC meeting: the day before the Review Meeting 2 (end of August 2020)

8. AOB

9. Brief scientific report from each partner and open discussion

10. Closing

Many thanks for the collaboration and enjoy the rest of the TEQ Workshop!

Testing the large-scale limit of Quantum Mechanics