

PERIODIC REPORT TEMPLATE

FRONT PAGE

PROJECT PERIODIC REPORT

Grant Agreement number: 228644

Project acronym: Crete-HEP-Cosmo

Project title: Crete Center for Particle Physics and Cosmology

Funding Scheme: Support Action

Date of latest version of Annex I against which the assessment will be made:

Periodic report: 1st

Period covered: from 1/4/2009 to 30/9/2010

Name, title and organisation of the scientific representative of the project's coordinator¹:

Professor Elias Kiritsis, Physics Department, University of Crete

Tel: +30 2810 394 209

Fax: +30 2810 394 274

E-mail: kiritsis@physics.uoc.gr

Projectwebsite²address: <http://hep.physics.uoc.gr/networking.html>

¹ Usually the contact person of the coordinator as specified in Art. 8.1. of the grant agreement

² The home page of the website should contain the generic European flag and the FP7 logo which are available in electronic format at the Europa website (logo of the European flag: http://europa.eu/abc/symbols/emblem/index_en.htm ; logo of the 7th FP: http://ec.europa.eu/research/fp7/index_en.cfm?pg=logos). The area of activity of the project should also be mentioned.

Declaration by the scientific representative of the project coordinator¹

I, as scientific representative of the coordinator¹ of this project and in line with the obligations as stated in Article II.2.3 of the Grant Agreement declare that:

- The attached periodic report represents an accurate description of the work carried out in this project for this reporting period;
- The project (tick as appropriate):
 - has fully achieved its objectives and technical goals for the period;
 - has achieved most of its objectives and technical goals for the period with relatively minor deviations³;
 - has failed to achieve critical objectives and/or is not at all on schedule⁴.
- The public website is up to date, if applicable.
- To my best knowledge, the financial statements which are being submitted as part of this report are in line with the actual work carried out and are consistent with the report on the resources used for the project (section 6) and if applicable with the certificate on financial statement.
- All beneficiaries, in particular non-profit public bodies, secondary and higher education establishments, research organisations and SMEs, have declared to have verified their legal status. Any changes have been reported under section 5 (Project Management) in accordance with Article II.3.f of the Grant Agreement.

Name of scientific representative of the Coordinator¹: Elias Kiritsis

Date: 25/ 10/ 2010

Signature of scientific representative of the Coordinator¹:



³ If either of these boxes is ticked, the report should reflect these and any remedial actions taken.

⁴ If either of these boxes is ticked, the report should reflect these and any remedial actions taken.

1. Publishable summary

The main purpose of the project CreteHEPCosmo is to provide a substantial boost to the [Crete Center of Theoretical Physics](#), a scientifically promising research institution in Heraklion, Crete Greece in order to arrive at the level of leading European institutions.

This is planned to be achieved by

- Establishing a strong long term research team of core researchers that are at European level, establish a computational unit and upgrade the hosting facilities for incoming researchers.
- Import new research expertise in key research directions of interest for the Center via the hiring of experienced researchers
- Be in tune with top research directions and top European groups by exchanging visits and by the organization of specially targeted research meetings in Crete.
- Establish an Advisory and Evaluation Committee that will review the Center's strategy and activities.

In the first half of the project these issues were addressed successfully and in due time.

A senior postdoctoral researcher was hired (Vassilis Niarchos, PhD Chicago, from Ecole Polytechnique, France) in order to boost the scientific activities of the center and lead his own research. Several other young researchers were hired after a prominent international campaign which attracted about 400 qualified candidates in the field. In the first round the following researchers were hired

Rene Meyer (PhD University of Munich)
Matthew Lippert (PhD University of California, Santa Barbara)
Hong Bao Zhang (PhD University of Beijing)

while in the second round the following were also hired

Matti Jarvinnen (PhD University of Helsinki)
Takeshi Morita (PhD University of Kyoto)
Anastassios Taliotis (PhD University of Ohio)
Pavel Spirin (PhD Moscow University)

In meantime a small computational facility was created in order to accommodate the numerical work done by Center members. The hosting infrastructure was also improved in order to handle the incoming researchers and visitors of the program.

In order to increase the competitiveness of the Center, links with nine prominent European institutions are cultivated

- **Laboratoire de Physique Theorique de l'Ecole Normale Superieure, Paris.**
- **Theory Group, Universita de Roma II, Tor Vergata.**
- **Arnold Sommerfeld Institute, Max Planck Institute, Munich.**
- **Physics Division, CERN, Geneva.**

- **Institute for Theoretical Physics, University of Amsterdam.**
- **Department of Applied mathematics and Theoretical Physics, University of Cambridge.**
- **Theory group, Imperial College, London.**
- **Israel Center of Excellence.**
- **Laboratoire d'Astroparticule et Cosmologie (APC), Paris.**

Numerous visits and common activities were planned and executed by Center members to these institutions of related meeting. A vigorous incoming visitor program was also instituted averaging two visitors per week that visit the Center, give seminars on their work and interact with Center members.

In a different line the opening of the Center to the physics community abroad was also cultivated by the organization of workshops and conferences. So far [a workshop has been organized in Heraklion](#) focused on major open problems in cosmology linking theory to observations. Some of the top experts in the field attended and directed presentations and discussions. [A conference was also organized in Kolymbari, Crete](#) focusing on the broad subject of gauge theories and the structure of space-time. Both were very successful events.

An [Evaluation and Advisory committee](#) was established from three prominent scientists of the field

Curtis Callan, Princeton University, (Dirac Medal 2004, Sakurai Prize 2000)

John Iliopoulos, ENS, Paris, (Dirac Medal 2007, Sakurai Prize 1987, Aristeion Bodossaki 2000),

Gabriele Veneziano, CERN and College de France (Danny Heineman Prize, 2004, E. Fermi Prize 2005)

They visited the Center in November 2009, interacted with the Center members and issued a positive report that can be found at the [Center's website](#).

In the meantime interesting research work has been performing at the Center focusing both on traditional and interdisciplinary directions. Some of the work has been distinguished:

A. The paper

Horava-Lifshitz Cosmology: [Elias Kiritsis](#), [Georgios Kofinas](#), ([Crete U.](#)) . Apr 2009. 18pp. Published in [Nucl.Phys.B821:467-480,2009](#). e-Print: [arXiv:0904.1334](#) [hep-th] has been selected in the 50 most cited papers after 2009, by the [SPIRES research database](#) (currently in position 39)

B. The papers

Deconfinement and Gluon Plasma Dynamics in Improved Holographic QCD. [Umut Gursoy](#), ([Ecole Polytechnique, CPHT](#)) , [Elias Kiritsis](#), ([Crete U.](#)) , [Liuba Mazzanti](#), [Francesco Nitti](#), ([Ecole Polytechnique, CPHT](#)) . Apr 2008. (Published Oct 31, 2008). 6pp. Published in [Phys.Rev.Lett.101:181601,2008](#). e-Print: [arXiv:0804.0899](#) [hep-th]

and

Improved Holographic Yang-Mills at Finite Temperature: Comparison with Data. [U. Gursoy](#), ([Utrecht U.](#)) , [E. Kiritsis](#), ([Crete U.](#)) , [L. Mazzanti](#), ([Ecole Polytechnique, CPHT](#)) , [F. Nitti](#), ([APC, Paris](#)) . Mar 2009. 36pp. Published in [Nucl.Phys.B820:148-177,2009](#). e-Print: [arXiv:0903.2859](#) [hep-th]

were highlighted in [Physical Review Focus](#) on the occasion of a recent high-precision lattice calculation in Large N gauge theory.

C. The Paper

A Simplified Quantum Gravitational Model of Inflation. N.C. Tsamis, (Crete U.) , R.P. Woodard, (Florida U.) . CRETE-08-11, UFIFT-QG-08-05, Jul 2008. 34pp. Published in Class.Quant.Grav.26:105006,2009. e-Print: arXiv:0807.5006 [gr-qc]

has been highlighted in 2009 by the Journal of Classical and Quantum Gravity and was allowed free access by all researchers.

Finally the Center has been performing outreach activities that involved [several public lectures](#), days of instruction of highschool students via [Masterclasses](#), and popular articles in mainstream media.

[The Crete Center of Theoretical Physics Webpage](#) and [the CreteHEPCosmo webpage](#)

2. Project objectives for the period

The objectives of the present project were summarized in Annex I as follows:

- Establish a strong long term team of core researchers that are at European level.
- Import new research expertise in keys research directions of interest for the Center via the hiring of experienced researchers
- Be in tune with top research directions and top European groups by exchanging visits and by the organization of specially targeted research meetings in Crete.
- Establish a small computational facility that will enhance the research work of the Center.

There has been concrete progress on all of them as specified by the project and its deliverables. This progress is reported below

Please provide an overview of the project objectives for the reporting period in question, as included in Annex I of the Grant Agreement. These objectives are required so that this report is a stand-alone document.

Please include a summary of the recommendations from the previous reviews (if any) and indicate how these have been taken into account.

3. Work progress and achievements during the period

Please provide a concise overview of the progress of the work in line with the structure of Annex I of the Grant Agreement.

Work Package 1: Strengthening the research potential

Task-1.1 Involves hiring a senior experienced researcher. V. Niarchos (PhD University of Chicago) from Ecole Polytechnique was hired starting July 1 2010 till 30-8-2012.

The details of the procedure are described in the Initial and Supplementary Hiring Reports. (The first sent to the Community Officer at the first month of the project)

Task 1.2

This task involves the hiring of several experienced researchers in two rounds. In the first round (starting 1/9/2009) three researchers were hired for 3 years.

Rene Meyer (PhD University of Munich, Germany)

Matthew Lippert (PhD University of Santa Barbara, USA)

Hong Bao Zhang (PhD University of Beijing, China)

In the second year the following researchers were hired

Matti Jarvinen (PhD University of Helsinki, Finland)

Takeshi Morita (PhD University of Kyoto, Japan)

Anastasios Taliotis (PhD University of Ohio)

Pavel Spirin (PhD University of Moscow)

The details of the procedure are described in the Initial and Supplementary Hiring Reports.

The hiring procedure was extremely successful. V. Niarchos is a young independent scientist of world class that is interested in the Center and there are very good chances that he will remain.

All of the hired postdoctoral researchers are in the top class internationally both in terms of their institutions as well as their capacities. They work in several new fields, some of them interdisciplinary

Moreover the research work of the Center has been distinguished in several cases:

A. The paper

Horava-Lifshitz Cosmology: [Elias Kiritsis](#), [Georgios Kofinas](#), ([Crete U.](#)) . Apr 2009. 18pp.

Published in **Nucl.Phys.B821:467-480,2009**. e-Print: [arXiv:0904.1334](#) [hep-th]

has been selected in the 50 most cited papers after 2009, by the [SPIRES research database](#) (currently in position 39)

B. The papers

Deconfinement and Gluon Plasma Dynamics in Improved Holographic QCD.

[Umut Gursoy](#), ([Ecole Polytechnique, CPHT](#)) , [Elias Kiritsis](#), ([Crete U.](#)) , [Liuba Mazzanti](#), [Francesco](#)

[Nitti](#), ([Ecole Polytechnique, CPHT](#)) . Apr 2008. (Published Oct 31, 2008). 6pp.

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and

Improved Holographic Yang-Mills at Finite Temperature: Comparison with Data. [U. Gursoy](#), ([Utrecht U.](#)) , [E. Kiritsis](#), ([Crete U.](#)) , [L. Mazzanti](#), ([Ecole Polytechnique, CPHT](#)) , [F. Nitti](#), ([APC, Paris](#)) . Mar 2009. 36pp. Published in [Nucl.Phys.B820:148-177,2009](#). e-Print: [arXiv:0903.2859 \[hep-th\]](#)

were highlighted in [Physical Review Focus](#) on the occasion of a recent high precision lattice calculation in Large N gauge theory.

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A Simplified Quantum Gravitational Model of Inflation. N.C. Tsamis, ([Crete U.](#)) , R.P. Woodard, ([Florida U.](#)) . CRETE-08-11, UFIFT-QG-08-05, Jul 2008. 34pp. Published in [Class.Quant.Grav.26:105006,2009](#). e-Print: [arXiv:0807.5006 \[gr-qc\]](#)

has been highlighted in 2009 by the Journal of Classical and Quantum Gravity and was allowed free access by all researchers.

Task 1.3 *Establishing a computational facility.*

As envisaged in the Annex, a small computational facility was installed after a sequence of procedures that are described in detail in the Computing and Infrastructure Report that has been send to the Community Officer the 7th month of the project and is attached here, The computational cluster is fully functional and is used by the Center Members.

Task 1.4 Establishment of a small-scale infrastructure for the new personnel that will be hired in this work package as well as the visitors from the collaborating institutions that are expected from the next work-package. This has been achieved during the first 6 months of the project.

Office space was prepared for the hired researchers plus 2 visiting scientists.

This involved the purchase of 6 personal standard Desktop PCs, one laptop for the use of traveling researchers and basic furniture. These are described in the Computing and Infrastructure Report.

The Deliverables of this Work Package are the Initial and Supplementary hiring Reports as well as the Computing and Infrastructure Report that are all attached to this report. Everything is going according to plan.

Work package 2: Personnel exchanges and twinning

Objectives: Outgoing visits of Center members to high quality centers of research as well as ingoing visits of scientists from these and other European institutes to Crete.

Many outgoing visits of the Center Scientists were made in order to visit the participating European Institutions or participate in collaborative activities with them.

- **Laboratoire de Physique Theorique de l'Ecole Normale Superieure, Paris.**
- **Theory Group, Universita de Roma II, Tor Vergata.**
- **Arnold Sommerfeld Institute, Max Planck Institute, Munich.**

- **Physics Division, CERN, Geneva.**
- **Institute for Theoretical Physics, University of Amsterdam.**
- **Department of Applied mathematics and Theoretical Physics, University of Cambridge.**
- **Theory group, Imperial College, London.**
- **Israel Center of Excellence.**
- **Laboratoire d'Astroparticule et Cosmologie (APC), Paris.**

Similarly incoming visits of collaborating scientists were made. Both detailed schedules appear in the file on Outgoing and Incoming visits. As anticipated the budget of Incoming visits is already almost spent. Several collaboration agreements have been cultivated, two are already signed (APC and Brussels), one is in the process of being signed (ENS) and several others negotiated.

The deliverable of this Work package is the list of incoming and outgoing visits that is attached. Everything is going according to plan.

Work package 3: Organization of meetings

So far two meetings have been successfully organized.

The first was a Cosmology Workshop that was organized in Heraklion from 28 March to 5 April 2010. The website of the meeting is <http://hep.physics.uoc.gr/cosmo10/index.html>

The meeting focused on recent developments of cosmology and was a meeting with few talks by experts, and a lot of discussions during or after the presentations. The meeting was a clear success in its format and impact, and Center members profited a lot from it.

The speakers included world class leaders in their fields.

It has made well known the work of Center members in recent non-Lorentz invariant theories of gravity and has created strong links with senior cosmologists from other institutions namely ENS, APC, Brussels, Munich Montreal Israel Cambridge and IPMU. All participants commented very positively on the success of the meeting.

More details appear in the Report that is attached.

The second was a Conference organized 11-18 September 2010 at the Conference Center of the Orthodox Academy in Kolymbari, Crete. The title of the meeting was Crete Conference on gauge theories and the structure of spacetime, and the conference website is <http://hep.physics.uoc.gr/conf09/>. It was a conference with a broad set of subjects. It had a few daily review talks on important subjects as well as standard presentations by leading researchers in the field. Participation was ample and a lot of known scientists in the field from Europe, US, Korea and Japan has participated. All Crete junior researchers gave talks at the conference and the work produced at the Center was widely appreciated. Most of the speakers were leaders in the fields coming from top Universities in Europe and Elsewhere. Participants have been extremely satisfied by the meeting both in terms of the organization as well as the science involved.

More details as well as budget information is provided in the appropriate report.

A further workshop is planned for June 2012.

The deliverables for this work package concerning these events are attached or are already in place (websites)

Work package 4: External Advisory/Evaluation Committee

The Committee consisting of C. Callan, J. Iliopoulos and G. Veneziano has visited the Center 18-19 November 2009. They have attended a presentation of the Center and its recent history by the Coordinator and individual research presentations by all active researchers of the Center. They have individually discussed with senior scientists, postdoctoral fellows and PhD students.

They have also met with the chairman of the physics department as well as the Dean of the School of Sciences. Their initial report was already sent to the Community Officer and is attached below. It is very positive and draws several interesting lines for research at the center.

For each work package -- except project management, which will be reported in section 3.5-- please provide the following information:

- *A summary of progress towards objectives and details for each task;*
- *Highlight clearly significant results;*
- *If applicable, explain the reasons for deviations from Annex I and their impact on other tasks as well as on available resources and planning;*
- *If applicable, explain the reasons for failing to achieve critical objectives and/or not being on schedule and explain the impact on other tasks as well as on available resources and planning (the explanations should be coherent with the declaration by the project coordinator) ;*
- *a statement on the use of resources, in particular highlighting and explaining deviations between actual and planned person-months per work package and per beneficiary in Annex I (Description of Work)*
- *If applicable, propose corrective actions.*

4. Deliverables and milestones tables

Deliverables (excluding the periodic and final reports)

Please list all the deliverables due in this reporting period, as indicated in Annex I of the Grant Agreement.

Deliverables that are of a nature other than written "reports", such as "prototypes", "demonstrators" or "others", should also be accompanied by a short report, so that the European Commission has a record of their existence.

If a deliverable has been cancelled or regrouped with another one, please indicate this in the column "Comments".

If a new deliverable is proposed, please indicate this in the column "Comments".

This table is cumulative, that is, it should always show all deliverables from the beginning of the project.

TABLE 1. DELIVERABLES ⁵									
Del. no.	Deliverable name	WP no.	Lead beneficiary	Nature	Dissemination level	Delivery date from Annex I (proj month)	Delivered Yes/No	Actual / Forecast delivery date	Comments
D1	Experienced researchers: Job advertisement and hiring report	1	Crete	report	PU	1	Yes		Supplied with a supplementary report, after the changes of Annex I on hiring
D2	Computer and office equipment specifications and offers	1	Crete	report	PU	7	Yes		
D3	Advisory report of the AEC	4	Crete	report	PU	8	Yes		
D4	1st Workshop Announcement on the Website	3	Crete	Webpage+report	PU	9	Yes	10	The workshop moved to a later date

⁵ For Security Projects the template for the deliverables list in Annex A1 has to be used.

	presentations posted at website and report*								
D5	Outgoing visits reports per researcher and per visit+	2	Crete	report	PU	12	Yes	12	We supply now this report for the full 18 months.
D6	Conference Announcement on the Website presentations posted at website and report*	3	Crete	Webpage+report	PU	23	Yes	18	The Conference was moved to an earlier date.

Milestones

Please complete this table if milestones are specified in Annex I of the Grant Agreement.

Milestones will be assessed against the specific criteria and performance indicators as defined in Annex I.

TABLE 2. MILESTONES							
Milestone no.	Milestone name	Work package no	Lead beneficiary	Delivery date from Annex I	Achieved Yes/No	Actual / Forecast achievement date	Comments
1	Hiring of key personnel	1	Crete	First term	Yes	First term	
2	First periodic report	1-5	Crete	18	Yes	18	

5. Project management

- *Consortium management tasks and achievements;*

The project is managed by the Management Committee (MC) chaired by the Coordinator. It includes as members Profs T. Petkou, T. Tomaras, N. Tsamis, and the senior Researcher hired by the project, V. Niarchos, from the time he is hired.

The MC meets at regular intervals in order to decide important issues concerning the project. The main ones were:

October 2008. Decision on the announcement of postdoctoral openings associated with the project.

December. 2008 First analysis of the 354 applicants for the researcher positions. Initial ranking.

18-19 December 2008. Participation of E. Kiritsis in the Leuven meeting where there was a global loose ranking of applicants at the European level

Late December 2008. New meeting of the committee, formation of the final short list, offers given out.

January 2008. Assessment of the hiring round. Preparations for the hosting of the new researchers.

April 2009. Unexpected start of the project. Contingency plans and changes of dates as the start did not coincide with the academic year. Discussion of Visa issues, and other local issues associated with the hosting of researchers.

August 2009. Skenderis and Taylor decline offers. New offer made to Niarchos that he accepted. Preparation of the Advisory/Evaluation Committee (AEC) meeting in November.

September 2009. Decisions on outgoing and incoming visits for 2009. Planning of the strategy of outreach activities. Planning of the first two meetings, the Cosmology Workshop and the Conference.

November 2009. Several meetings before during and after the AEC committee visit. Changes of employment status affects salaries. Start of the procedure to change the Annex I accordingly after discussions. Advertisement of extra researcher positions.

December. 2009 First analysis of the 400 applicants for the researcher positions. Initial ranking.

17-18 December 2009. Participation of E. Kiritsis in the Leuven meeting where there was a global loose ranking of applicants at the European level

Late December 2009. New meeting of the committee, formation of the final short list, offers given out. Decisions on outgoing and incoming visits for the first half of 2010.

January 2010. Assessment of the hiring round. Preparations for the hosting of the new researchers.

February 2010. Final preparation meeting for the Cosmology Workshop.

May 2010. Decisions on outgoing and incoming visits for the second half of 2010. End of the negotiation for the changes in Annex I

July 2010. Niarchos joins the MC. Meeting to assess the situation with the project.

August 2010. Final meeting for the preparation of the conference.

September 2010. Meeting to assess the first half period of the project.

So far the management structure and procedures has worked smoothly.

- *Problems which have occurred and how they were solved or envisaged solutions;*

Several problems appeared on the way

1. The start of the project did not coincide with the natural time frame for academic matters. This has delayed the starting point of the hired researchers.

2. Visa and Work permit problems have appeared for the non-European researchers due to the haphazard structure of Greek State services. It took an enormous work on the part of our secretary and the MC to eventually smooth out the situation for the hosted fellows, which on the other hand continues to be complicated for newcomers.

3. Changes in the Greek work contract structures has changed the sums contributed to the state pension scheme. This issue was eventually solved by changing annex I and redistributing the salaries accordingly.

4. Because of all of the above the work load for the secretary hired to support the project was multiplied by two. No sufficient funds were allocated in the project to support this change, and our request for reallocation to the Community Officer was refused. The University and Department are under a severe financial crisis and they declared they cannot help. We are still searching for a viable solution

- *Changes in the consortium, if any;*

None

- *List of project meetings, dates and venues;*

First Workshop: from 28 March to 5 April 2010 at the Physics Department, University of Crete

Conference: from 11-18 September 2010 at the Conference Center of the Orthodox Academy of Crete, Kolymbari, Crete.

- *Project planning and status;*

The project is moving smoothly, and as planned in the revised Annex I

- *Impact of possible deviations from the planned milestones and deliverables, if any;*

The Impact of the changes is positive as it allowed to Center to diversify its research directions

- *Any changes to the legal status of any of the beneficiaries, in particular non-profit public bodies, secondary and higher education establishments, research organisations and SMEs;*

None

- *Development of the Project website, if applicable;*

The project web-site was built alongside the website of the Center: <http://hep.physics.uoc.gr/>
It continues to develop and has several directions including outreach.

- *Use of foreground and dissemination activities during this period (if applicable).*

Several outreach activities were planned and executed during this project period

A series of public lectures by world-class researchers in the fields of the Center
<http://hep.physics.uoc.gr/events/30years.html>

A Master class for high school students, in order to come to contact with modern issues of experimental particle physics and LHC, <http://hep.physics.uoc.gr/events/masterclass.html>

Several press releases to the Greek and local media, on the occasion of the two meetings and other distinctions of the research of the Center.

The section should also provide short comments and information on co-ordination activities during the period in question, such as communication between beneficiaries, possible co-operation with other projects/programmes etc.

For Grant Agreements related to infrastructures (Annex III of the Grant Agreement), the access provider shall include a section in the periodic reports on the access activity, indicating the membership of the selection panel as well as the amount of access provided to the user groups, with the description of their work, and the names and home institutions of users.

6. Explanation of the use of the resources

Please provide an explanation of personnel costs, subcontracting and any major direct costs incurred by each beneficiary, such as the purchase of important equipment, travel costs, large consumable items, etc. linking them to work packages.

There is no standard definition of "major direct cost items". Beneficiaries may specify these, according to the relative importance of the item compared to the total budget of the beneficiary, or as regards the individual value of the item.

These can be listed in the following tables (one table by participant):

TABLE 3.1 PERSONNEL, SUBCONTRACTING AND OTHER MAJOR DIRECT COST ITEMS FOR BENEFICIARY 1 FOR THE PERIOD			
Work Package	Item description	Amount	Explanations
Ex: 1	Personnel costs	123,767.08 €	Salaries of 4 postdocs, and computer personnell
1	Computer Equipment	14,048.33 €	Computing Facility
1	Office Infrastructure	12,858.98 €	For the hosting of researchers
2	Outgoing Visits	75,181.41 €	
2	Incoming Visits	38,934.50 €	
3	Meetings	49,379.86 €	First Workshop +Conference
	Advisory Committee+secretarial help	20,779.60€	
	TOTAL DIRECT COSTS⁶	334,949.76€	
	overhead	23,446.48 €	
	TOTAL COSTS	358,396.24 €	

⁶ Total direct costs have to be coherent with the direct costs claimed in Form C

The following table is required only for the funding schemes for Research for the benefit of SMEs

THE TRANSACTION

Please provide a list of the actual cost incurred by the RTD performers during the performance of the work subcontracted to them. These costs refer only to the agreed 'Transaction'.

Name of RTD Performer	Number of person months	Personnel Costs	Durable equipment	Consumables	Computing	Overhead Costs	C
TOTAL							

7. Financial statements – Form C and Summary financial report

Please submit a separate financial statement from each beneficiary (if Special Clause 10 applies to your Grant Agreement, please include a separate financial statement from each third party as well) together with a summary financial report which consolidates the claimed Community contribution of all the beneficiaries in an aggregate form, based on the information provided in Form C (Annex VI) by each beneficiary.

When applicable, certificates on financial statements shall be submitted by the concerned beneficiaries according to Article II.4.4 of the Grant Agreement.

IMPORTANT:

Form C varies with the funding scheme used. Please make sure that you use the correct form corresponding to your project. Templates for Form C are provided in Annex VI of the Grant Agreement. An example for collaborative projects is enclosed hereafter. A Web-based online tool for completing and submitting the forms C is under preparation. If you have to submit forms C before the tool becomes available, please ask your Commission project officer for an Excel version of the form.

If some beneficiaries in security research have two different rates of funding (part of the funding may reach 75% in reference with Article 33.1 of the EC rules for participation - REGULATION (EC) No 1906/2006) then two separate financial statements should be filled by the concerned beneficiaries and two lines should be entered for these beneficiaries in the summary financial report.

8. Certificates

List of Certificates which are due for this period, in accordance with Article II.4.4 of the Grant Agreement.

Beneficiary	Organisation short name	Certificate on the financial statements provided? yes / no	Any useful comment, in particular if a certificate is not provided
1		No	Expenditure threshold not reached

A copy of each duly signed certificate on the financial statements (Form C) or on the methodology should be included in this section, according to the table above (signed originals to be sent in parallel by post).