

COST Grant workplan

I. ACTION PROFILE

Domain: Information and Communication Technologies (ICT)

Action no. and title: IC1104 Random Network Coding and Designs over GF(q)

Chair: Dr. Marcus Greferath

START date: 26/04/2012

END date: 25/04/2016

Number of signatories: 16

Number of non-COST members: 0

Number of COST country entities (institutes, etc.) currently participating: 18

Number of non-COST entities (institutes, etc.) currently participating: 0

Number of MC Members: approx. 36

Working Groups with numbers, titles and approximate number of members:

WG 1: Bounds on the size of network codes, No. of members: 15

WG 2: Development of encoding and decoding schemes, No. of members: 15

WG 3: Cryptographic aspects, No. of members: 15

WG 4: Construction of network codes and Grassmannian codes, No. of members: 15

WG 5: Foundational aspects, No. of members: 20

II. DETAILED BUDGET

(1) MEETINGS

Management Committee Meetings

Location: Monte Verita, Ascona, Switzerland

Date: End of October 2012 (prospectively 30/10/2012), 1 day

Number of participants to be reimbursed: 36

Travel costs: 18.000 Euro (500 Euro/participant on average)

Comment: some MC members will be partially reimbursed from other sources.

Organisational support: 0 Euro

(Comment: this MC Meeting is going to happen during another conference, on which some members will take part and will be partially reimbursed from other resources.)

Location: Bergen, Norway

Date: Mid April 2013, 1 day

Number of participants to be reimbursed: 36

Travel costs: 27.000 Euro (750 Euro/participant)

Organisational support: 2000 Euro

Working Group Meetings

WG no. and title: 1. Bounds on the size of network codes

Location: Barcelona, 1 day

Date: 2nd week of February 2013

Number of participants to be reimbursed: 5

Travel costs: 2.500 Euro (500 Euro/participant)

Organisational support: 0 Euro

(Comment: to be organized during the training school, see below, here are only additional costs listed.)

WG no. and title: 2. Development of encoding and decoding schemes

Location: Barcelona

Date: 2nd week of February 2013, 1 day

Number of participants to be reimbursed: 5

Travel costs: 2.500 Euro (500 Euro/participant)

Organisational support: 0 Euro

(Comment: to be organized during the training school, see below, here are only additional costs listed.)

WG no. and title: 3. Cryptographic aspects

Location: Barcelona

Date: 2nd week of February 2013, 1 day

Number of participants to be reimbursed: 5

Travel costs: 2.500 Euro (500 Euro/participant)

Organisational support: 0 Euro

(Comment: to be organized during the training school, see below, here are only additional costs listed.)

WG no. and title: 4. Construction of network codes and Grassmannian codes

Location: Barcelona

Date: 2nd week of February 2013, 1 day

Number of participants to be reimbursed: 5

Travel costs: 2.500 Euro (500 Euro/participant)

Organisational support: 0 Euro

(Comment: to be organized during the training school, see below, here are only additional costs listed.)

WG no. and title: 5. Foundational aspects

Location: Barcelona

Date: 2nd week of February 2013, 1 day

Number of participants to be reimbursed: 6

Travel costs: 3.000 Euro (500 Euro/participant)

Organisational support: 0 Euro

(Comment: to be organized during the training school, see below, here are only additional costs listed.)

Other meetings – Core group meetings

Title: IC1104 – Core 1

Location: Barcelona

Date: 2nd week of February 2013

Number of participants to be reimbursed: 7

Travel costs: 0 Euro

Organisational support: 0 Euro

(Comment: immediately after the training school, see below, no additional costs)

Workshops and Conferences

Title: Workshop on Random Network Coding

Location: Bergen, Norway

Date: Mid April 2013, 2 days

Number of participants to be reimbursed: 20

Travel costs: 12.000 Euro

Organisational support: 0 Euro

(Comment: Together with the second MC Meeting, hence here reduced costs.)

(2) SHORT TERM SCIENTIFIC MISSIONS (STSMs)

Number: 5

Cost: 10,000 Euro

(3) TRAINING SCHOOLS

Location: Barcelona, Spain

Date: 2nd week of February 2013, 4 days

Number of Trainees to be reimbursed: 25

Trainees Grants: 15.000 (25 x 600) Euro
Number of Trainers to be reimbursed: 8
Travel costs: 8.000 Euro
Organisational support: 4.000 Euro

(4) DISSEMINATION, PUBLICATIONS, OUTREACH

Title: Action Web-Page
Cost: 3.000 Euro

Title: Dissemination
Cost: 1.000 Euro

(5) FINANCIAL & SCIENTIFIC ADMINISTRATION AND COORDINATION (FSAC)

15 % of (1 to 4)

III. WORK PLAN

(1) OBJECTIVES

As explained already in the Memorandum of Understanding, we will establish 5 Working Groups based on a natural grouping of research projects in the theory and practice of network coding. Each Working Group will be co-ordinated by a Working Group Leader. It will be encouraged that the leaders of each Working Group will be from different disciplines, affiliations, ages, and gender, in order to ensure balance in all of these aspects, and particularly to ensure that members from all three mathematics, computer science, and engineering will get involved in Working Group management functions.

The short titles of the Working Groups as per MoU and continuing discussions in the kick-off meeting are the following:

1. Bounds on the size of network codes,
2. Development of encoding and decoding schemes, practical/engineering aspects of network coding,
3. Cryptographic aspects,
4. Construction of network codes and Grassmannian codes,

5. Foundational aspects, algebraic aspects in network coding, distributed storage.

This slight deviation from the original work plan does not induce any cut in the programme, but solely serves an adaptation to the more interdisciplinary structure of the set of participants involved. It corresponds to the currently most important topics, from a mathematical, a computer-scientific, and an engineering view.

(2) ACTIVITIES

An action web-page will be put in life as soon as this COST Grant plan has been accepted. It will be the main source of information for everyone wishing to participate in this action. Due to the Action's interdisciplinary nature (mathematics, engineering, computer science), a table with personal data pointing out the interests, goals and background of each participant will be published on this web-page as a direction and orientation for anyone intending to get involved.

During the first, organizational period (between the kick-off meeting and the first formal MC meeting), it is expected that the Working groups are going to be formed under the supervision of provisional WG leaders (coordinators), selected at the kick-off meeting. In parallel, STSM applications will be encouraged, to move and engage young researchers as soon as possible and to be able to inform the MC at the first meeting on the results.

As drafted in the budget plan and discussed during the kick-off meeting, a first MC meeting will be held during the Conference on "Current Trends in Coding Theory" that will take place in Ascona (Switzerland) from 28.10. till 02.11.2012. At this meeting tentative WG leaders will report, WG leaders will be formally appointed, the first STSMs approved, and any further issues arising discussed.

The next event is going to be a combination of a Training School, Working Group meetings and a summarizing Core Group meeting (at no additional cost, as all members are expected to be present at this event). It is going to be held in Barcelona (Spain) in the second week of February, 2013. It is our intention to engage 8 trainers, chosen among experts participating in the working groups and other field experts for the 4-day training school.

The second MC meeting is planned to be combined with a Workshop and to be organized by the University of Bergen (Norway) and held there in the middle of April 2013. It will be dedicated to assess the first

years achievements and to the preparation of the second year's activities and Work and Budget Plan. The workshop should include reports on all scientific achievements during the action's first year. Experts external to the Action will be invited to give talks at this WS.

The mentioned activities coincide with those proposed in the MoU, except that there are no resources for a second round of WG meetings; no negative impact is envisaged at this stage. On the other hand, we are clearly convinced of the necessity and usefulness of the training school that we want to organize during the first year of our action.

(3) OUTPUTS PLANNED FOR YEAR 1

The following lists the intended targets for the dissemination of Action IC1104:

1. all participants of this Action,
2. scientific offspring – early-stage researchers,
3. the international research community in information and communication technology,
4. communication industry,
5. the general public.

The dissemination methods will consist of the Action's website, a final report about the first year's activities, workshop proceedings, joint peer-reviewed publications, outreach to the general public by giving open lectures on communication technology.

More concretely, we envisage a record of at least 5 joint peer-reviewed publications in leading periodicals per Working Group in this first year of the Action. Additionally, we consider to publish a peer-reviewed proceedings of the workshop in Bergen. No costs have been allocated for these proceedings as we plan to publish them in electronic form only.

Dissemination activities will be monitored by the MC of the Action and assessed in the first year's report. The results will also be discussed with international experts and professionals in order to identify possibly new targets for the Working Groups.

COST Grant budget plan – 1. year

Action no. and title: IC1104 Random Network Coding and Designs over GF(q)

Grant period: 01/08/2012 – 31/07/2013

Allocated budget:

A. SUMMARY BUDGET

(1) MEETINGS	€ 72.000 ...
(2) SHORT-TERM SCIENTIFIC MISSIONS	€ 10.000 ...
(3) TRAINING SCHOOLS	€ 27,000 ...
(4) DISSEMINATION, PUBLICATIONS, OUTREACH	€ 4,000 ...

B. TOTAL SCIENCE EXPENDITURE (sum of (1) to (4)) € **113.000 ...**

C. FSAC (max. of 15% of B.) € **16.950 ...**

D. TOTAL EXPENDITURE (B+C) € **129.950 ...**