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London, 17 April 2015

## **Subject | Minutes of the Sixth Management Committee Meeting of COST Action IC1201 “Behavioural Types for Reliable Large-Scale Software Systems (BETTY)”**

*London, UK  
17 April 2015*

### **1. Welcome to participants**

The participants were welcomed by Dr Simon Gay, Chair of the Action. Dr Gay chaired the meeting.

### **2. Adoption of the agenda**

The agenda for the meeting was adopted (Annex 1). 15 parties were present, and so the meeting was quorate.

### **3. Approval of the minutes of the last meeting; matters arising from the minutes**

The minutes of the last meeting were approved. Dr Gay said that matters arising from the minutes would be covered by later agenda items.

### **4. Update from the Action Chair**

Dr Gay reported that the Action has 22 parties, the same as at the time of the last meeting. Argentina's application to join as an International Partner Country has completed the administrative processes. The main people involved are Hernán Melgratti and Eduardo Bonelli. Neither of them were present at the WG meetings on the same day as the MC meeting, but it is hoped that they will attend future events.

Dr Gay summarised expenditure during the second grant period, 1<sup>st</sup> June 2014 – 31<sup>st</sup> May 2015. The most significant items in the planned budget were the Training School (July 2014, €39.5k), the MC/WG meeting in Rome (August 2014, €31.5k), an MC/WG meeting in 2015 (€30k), and STSMs (€19.2k). Dissemination costs are €5.5k and overheads are €18.8k. The total budget is €144.5k. Dr Gay explained that both the Training School and the MC/WG meeting in Rome had been less expensive than planned: €35.9k for the Training School and €25k for the MC/WG meeting. As a result it has been possible to increase the budget for STSMs to €29.5k.



Concerning STSMs, Dr Gay reported that 22 STSMs have been completed since 1<sup>st</sup> June, and 3 more have been approved for April and May. This year there has been a system of deadlines for STSM applications, instead of a continuous process; this has worked well, although a few STSMs had to be rejected or approved with a reduced budget. The rejected STSMs were either cases of multiple applications by the same person, or requests for travel by several people from the same site. There will be a final call for last-minute STSMs to take place during May, in case the WG/MC meetings in London (this meeting) do not fully use their budget. Dr Gay thanked the STSM coordinator, Dr Silvia Ghilezan, and the WG chairs, for their work on the STSM committee, and noted that the large number of STSMs continues to be a strength of the Action. He also reminded participants to acknowledge STSM funding in their publications.

## **5. Promotion of gender balance and of early stage researchers**

Dr Gay noted that BETTY activities continue to show a good gender balance and significant involvement of early stage researchers. Approximately 50% of STSMs have been by early stage researchers.

## **6. Follow-up of MoU objectives**

### **(a) Reporting**

Dr Gay explained that this year there will not be a COST Annual Progress Conference, but that he will still have to submit a written report. He asked participants to send him details about highlights of Action activity, for example significant publications.

### **(b) Working Group activity**

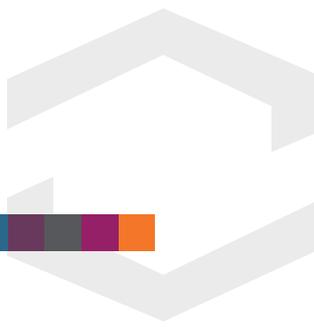
Dr Gay noted that the Working Group sessions during the morning and afternoon, before and after the MC meeting, were reporting on recent WG activity, especially research carried out during STSMs. It was agreed that the Action is making good progress towards its objectives. The programme of the WG meetings shows a welcome shift from foundational topics towards programming languages and tool implementations, correcting an imbalance towards theory which was present at the beginning of the Action. This demonstrates that the objectives of the Action, which generally speaking were to move the field of behavioural types from theory to practical applications, are being met. Dr Gay stated that he had added a Tools area to the Action web site, and was pleasantly surprised by the number of software tools that are now listed: 11, with at least two more still to add.

### **(c) Dissemination**

The previous MC meeting agreed to fund a trip by Dr Fabrizio Montesi (University of Southern Denmark) to Eindhoven, Netherlands, to give a keynote lecture at the International Workshop on Web Services and Formal Methods (WS-FM). Dr Gay reported that this lecture had taken place successfully; the lecture covered research related to the Action, and Dr Montesi had explicitly promoted the Action and its activities.

Dr Gay reported that he had given an invited talk at the IFIP Workshop on Trends in Concurrency (TRENDS), which had taken place in Rome, Italy, soon after the previous MC meeting. His talk included a description of the Action and its activities.

Dr Gay also reported that an article about the Action has now appeared in EU Researcher magazine. The article is based on an interview with Dr Gay, and gives a reasonable overview of the Action. The article is available from the Action web site. Publication of the article has not yet led to any enquiries about the Action, except for one from another publisher wanting to list the Action in a catalogue of research projects, for a fee; this offer was declined.



The chairs of Working Groups 1, 2 and 3 reported on progress towards publication of their state-of-the-art reports. The WG2 (Security) report has been reviewed by the Journal of Logical and Algebraic Methods in Programming (JLAMP); several revisions have been requested, but we are optimistic that the report will be accepted after another cycle of reviewing. The WG1 (Foundations) and WG3 (Languages) reports are still being reviewed. Now that substantial progress has been made in WG4 (Tools and Applications), Dr Gay will work with the WG4 chair and vice-chair to restart efforts to publish a state-of-the-art report.

## **(d) Funding applications**

Dr Gay reminded participants that in February 2014 there had been a special WG meeting in order to plan Horizon 2020 applications. This resulted in two groups developing two proposals. One, ARCTIC (coordinated by Professor Peter Thiemann) was submitted in September but not funded; the group will consider whether it can be reworked and resubmitted. The second group initially worked on a proposal called TIMBRE (coordinated by Dr Hans Hüttel); this was not submitted because the main industrial partner withdrew at a late stage. However, a similar group, also coordinated by Dr Hans Hüttel, submitted a proposal called BISCUIT to the Internet of Things call the week before the MC meeting. The meeting noted that although success rates are rather low, there will be other related calls next year which could be good targets for a resubmission if necessary; the group has assembled a good consortium of industrial partners, which should be maintained.

## **7. Scientific Planning**

### **(a) Scientific strategy**

Dr Gay summarised the plans for Year 3 of the Action, from the original proposal. The meeting agreed that in general the research of Action members was proceeding in the agreed directions. The plan for WG1 (Foundations) had been to work on behavioural types for probabilistic and quantitative properties. Quantitative analysis is represented by recent work on timing analysis, which was reported at these WG meetings and the previous WG meetings. However, there has not been any work on probabilistic analysis, which is still an unexplored direction for behavioural type theory. The meeting noted that research in this direction could be encouraged by identifying it as a desirable topic in STSM calls.

### **(b) Budget planning**

Dr Gay explained that as the budget periods run from 1<sup>st</sup> June to 31<sup>st</sup> May, and the Action will end on 25<sup>th</sup> October 2016, there will either be an extended budget period from 1<sup>st</sup> June 2015 to 25<sup>th</sup> October 2016, or a standard budget period from 1<sup>st</sup> June 2015 to 31<sup>st</sup> May 2016 followed by a short budget period from 1<sup>st</sup> June 2016 to 25<sup>th</sup> October 2016. Dr Gay had asked the COST Office for clarification of this point, as well as for information about the exact budget. The major activities to be included are: a WG/MC meeting later in 2015 (approx. €35k), a WG/MC meeting early in 2016 (approx. €35k), a Training School in the summer of 2016 (approx. €35k), a final meeting (approx. €40k), and STSMs (approx. €26k). Dr Gay noted that we are strongly encouraged to organise meetings in COST Inclusiveness Countries, and that we had already agreed that the Training School in 2016 will be in an Inclusiveness Country.

There was a discussion about the date and location of the second WG/MC meeting for 2015, which resulted in two options: (1) a meeting as part of the CONCUR conference in Madrid, Spain, during the first week in September 2015; (2) a separate meeting in November 2015, in a location to be decided. Two important factors emerged during the discussion. (1) The BEAT workshop, which this year has merged with the WS-FM workshop to form a larger combined symposium, will be co-located with CONCUR in Madrid, and we need to support this symposium as a significant event for our community (see also item 7(c)). (2) Because of teaching commitments, many Action participants and especially MC members would find it difficult to attend a meeting later in the autumn. A vote was taken, which was unanimously in favour of organising an MC meeting as part of the CONCUR conference. Further discussion indicated that the WS-FM / BEAT Symposium would provide an opportunity for Action participants to give presentations



and that therefore we would not organise a full day of WG sessions; however, the increasing level of activity on tool development means that we should organise a WG4 (Tools and Applications) meeting as a complement to the WS-FM / BEAT Symposium.

### **(c) Long-term planning**

Dr Gay reminded the meeting that the MC had previously voted to approve the combination of the BEAT (Behavioural Types) workshop with the WS-FM (Web Services and Formal Methods) workshop, forming a new and larger Symposium on Web Services, Formal Methods and Behavioural Types. This Symposium will be co-located with CONCUR (International Conference on Concurrency Theory) in Madrid, Spain, in the first week of September 2015. Dr Mario Bravetti, an MC member from Italy, was already a member of the steering committee of WS-FM and is now representing the Action on the steering committee of WS-FM / BEAT. Dr António Ravara, Action vice-chair, will be one of the two Programme Committee co-chairs.

Dr Gay noted that the second Training School will take place in the summer of 2016, and that we now need to start the process of choosing a location. Dr Gay will send a call for proposals to organise the Training School, before the end of April. The call will specify that the Training School must be organised in a COST Inclusiveness Country. A decision about the location of the Training School will be made at the MC meeting in September 2015.

Regarding a WG/MC meeting for 2016, the meeting agreed that this should take place in an Inclusiveness Country and that therefore we would not follow the previous practice of organising the meeting as part of the ETAPS conference, which will be in Eindhoven, Netherlands, in April 2016. Instead, Dr Anna Philippou offered to organise the meeting in Cyprus, and this offer was accepted by a unanimous vote. The exact date will be decided when Dr Philippou has been able to investigate the availability of meeting venues, but it should be approximately in April. If for some reason it turns out not to be possible to organise the meeting in Cyprus, then Dr Adrian Francalanza offered the backup possibility of organising the meeting in Malta.

Dr Gay noted that we will need to organise a final event, which should be close to the end of the Action on 25<sup>th</sup> October 2016. MC members will start thinking about possible formats, including inviting people from industry to sessions showcasing the achievements of the Action.

### **(d) Dissemination planning (publications and outreach activities)**

Dr Gay reminded Action members to inform him about publications, projects and news, for the website. He also noted that Action members had delivered successful tutorials at major conferences, for example one by Dr Vasco Vasconcelos and Dr Raymond Hu at POPL (Principles of Programming Languages) in January 2014. If other members are proposing to deliver tutorials at conferences then there is a possibility of providing Action funding as a dissemination activity.

## **8. Requests for new members**

None.

## **9. Non-COST applications to the Action**

None.

## **10. Any Other Business**



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None.

## 11. Location and Date of Next Meeting

September 2015, as part of the CONCUR conference in Madrid, Spain. The exact date will depend on how we decide to coordinate our meeting with the conference programme.

## 12. Summary of MC Decisions

The summary of the MC decisions was left for the minutes.

**13. Closing:** Dr Gay thanked everyone for their participation.



**Draft Agenda  
Management Committee Meeting**

**COST Action no. IC1201**

**Action Title: Behavioural Types for Reliable Large-Scale Software Systems (BETTY)  
Venue London, Country UK from 17<sup>th</sup> April 2015 to 17<sup>th</sup> April 2015**

1. Welcome to participants
2. Adoption of agenda
3. Approval of minutes and matters arising of last meeting
4. Update from the Action Chair
  - a. Status of Action, including participating countries
  - b. Action budget status
  - c. STSM status and new applications
5. Promotion of gender balance and of Early Stage Researchers (ESR)
6. Follow-up of MoU objectives
  - a. Progress report of working groups
7. Scientific planning
  - a. Scientific strategy
  - b. Action Budget Planning
  - c. Long-term planning (including anticipated locations and dates of future activities)
  - d. Dissemination planning (Publications and outreach activities)
  - e. Horizon 2020 proposals
8. Requests for new members
9. Non-COST applications to the Action
10. AOB
11. Location and date of next meeting
12. Summary of MC decisions
13. Closing