



**Formal Methods Europe  
Minutes of the 53<sup>rd</sup> meeting  
Held at the University of Limerick  
Limerick, Ireland  
23 June 2011  
[www.fmeurope.org](http://www.fmeurope.org)**

*Present* at the meeting were:

- Bernhard Beckert [Karlsruhe Institute of Technology]
- Béatrice Bérard [LIP6-CNRS & U. Pierre et Marie Curie]
- Menouer Boubekour [United Technologies Research Center]
- Jonathan Bowen [Museophile Ltd.]
- Michael Butler [U. Southampton]
- Andrew Butterfield [U. Dublin]
- Lars-Henrik Eriksson (Secretary) [Uppsala U.]
- Alessandro Fantechi [U. di Firenze]
- John Fitzgerald (Chairman) [Newcastle U.]
- Stefania Gnesi [ISTI-CNR]
- Mike Hinchey [LERO, U. Limerick]
- Randolph Johnson [Arundel System Logic]
- Peter Gorm Larsen [Aarhus School of Engineering]
- Tiziana Margaria [U. Potsdam]
- Dominique Méry [U. Henri Poincaré Nancy 1]
- Isabelle Perseil [INSERM]
- Nico Plat [West Consulting BV]
- Matteo Rossi [Politecnico di Milano]
- Wolfgang Schulte [Microsoft Research]
- Jin Song Dong [National U. of Singapore]
- Marcel Verhoef (Treasurer) [Chess BV]
- Jim Woodcock [U. York]

*Apologies* had been received from: Bernhard Aichernig, Derek Andrews, Robin Bloomfield, Tim Denvir, Eerke Boiten, Stefan Gruner, Cliff Jones and Dino Mandrioli

## **1 Welcome**

John Fitzgerald welcomed the members present.

## **2 Agree upon agenda**

The agenda was agreed upon.

## **3 Report on FM'11**

General chair Mike Hinchey reported on the organisation. There are 120 registered participants – 144 if workshops and tutorials are included. Estimated profit is €14,000 – a conservative figure, costs will likely be lower than budget.

Programme chair Michael Butler reported on the symposium programme. There were 101 reviewed submissions. 27 regular papers, 1 tool paper, and 1 educational paper were accepted. The trial with short tool papers was not successful.

[After the meeting, the tutorials chair, Nico Plat, made a report on the tutorials, which is attached to these minutes.]

#### **4 Planning of FM'12**

Dominique Méry and Béatrice Bérard reported on the progress of FM'12 planning. They are about to invite PC members. Posters have been made. There will be a specific category of tool papers. Work is in progress on the budget and sponsoring, but it is too early to give specifics.

#### **5 FM'14**

John Fitzgerald suggested that we make a specific call for proposals to arrange FM'14 outside Europe. A likely schedule would be to send out the call in September, with a deadline December 1st and a decision being taken by the FME board by January 1st. In case no proposal was found to be viable, a second round including Europe could be made in the spring. The meeting was positive to the suggestion.

#### **6 Collaboration with FMICS**

The FME is about to sign a memorandum of understanding with FMICS, similar to the one previously agreed on with BCS/FACS. The MoU is attached to these minutes.

#### **7 FME Education subgroup**

Activity is very low due to other engagements of the subgroups members. New people are invited to join the group!

#### **8 Membership/recruitment**

John Fitzgerald talked about the membership situation. FME needs more members and should plan a recruitment campaign.

*New action 53/1: Lars-Henrik Eriksson to plan a recruitment campaign.*

#### **9 Date and place of next meeting**

The next meeting will tentatively be held at the British Computer Society, London, February 16, 2012.

#### **10 Minutes of the previous meeting**

The item was skipped because of time limitations.

#### **11 Action list**

The item was skipped because of time limitations.

#### **12 Other Business**

Nico Plat and Matteo Rossi reported on SCORE 2011, which was held at the 2011 ICSE. A report is attached to these minutes.

John Fitzgerald reported on the progress of establishing FME awards. Jim Woodcock will chair the awards committee. One substantial award for contributions to the FM community will be awarded every 18 or 36 months. The framework should be in place this autumn.

Jonathan Bowen noted that the day of the meeting was Alan Turing's 99th birthday.

### **Summary of open actions**

- Action 49/7: Marcel Verhoef and Bernhard Aichernig to determine what material to transfer from the ForTIA web site to the FME web site and to carry out the transfer.
- Action 49/8: John Fitzgerald to report on the progress of establishing FME awards.
- Action 51/1: Lars-Henrik Eriksson to review the membership list and make a suggestion on how to handle membership in the future.
- Action 51/5: John Fitzgerald and Alessandro Fantechi to negotiate with FMICS about future collaboration.
- Action 52/1: Nico Plat to organise a FM themed contribution (workshop) at ICSE 2012.
- Action 52/2: John Fitzgerald to investigate coordination of FM conferences.
- Action 52/3: Lars-Henrik Eriksson and Bernhard Aichernig to prepare a discussion note on services to FME members.
- Action 53/1: Lars-Henrik Eriksson to plan a recruitment campaign.

## Report on FM'11 tutorials by tutorials chair Nico Plat

As part of FM2011, 4 tutorials were held on Monday 20 June and on Tuesday 21 June 2011:

- “Correct-by-Construction Development of Fault Tolerant Systems”, by Alexei Iliasov, Linas Laibinis, Elena Troubitsyna, and Alexander Romanovsky (half day);
- “Build Your Own Model Checker in One Month”, by Jin Song Dong and Jun Sun (half day);
- “Rely/Guarantee-thinking and Separation Logic”, by Viktor Vafeiadis and Cliff Jones (half day), and
- “Design of Real-time Embedded Control Systems using VDM++ and Bond graphs”, by Peter Gorm Larsen and Marcel Verhoef (full day).

The OC aimed to have 8 half day tutorials with at least 10 participants each. Initially, this goal seemed attainable when the Call for Proposals yielded 14 plans for tutorials, of which 7 were selected by Tutorial Chair Nico Plat in consultation with the FME Board.

A threshold of minimal 10 attendees for each tutorial before the deadline for “early bird” registration was set. Only one tutorial managed to achieve this number, however. Two tutorials were cancelled at this point because they had attracted less than 2 participants. The remaining tutorials that had more than 2 but less than 10 participants, were offered the possibility to go ahead, provided they would attract enough additional attendees in the week prior to the conference. Two tutorials used this opportunity and succeeded in attracting the required number of attendees. Thus FM2011 ended up with 4 tutorials, with a total of 36 participants, which is comparable to the number of attendees for tutorials at FM2009 (34, for 2 tutorials).

## FMICS/FME Industry Seminars

### A Memorandum of Understanding between the ERCIM Working Group on Formal Methods for Industrial Critical Systems (FMICS) and Formal Methods Europe (FME)

**FMICS** is a working group of the European Research Consortium for Informatics and Mathematics, established in 1992. Its objectives are: to bring together scientists to exchange experience in the industrial usage of formal methods; to coordinate efforts in industrial knowledge and technology-transfer; to promote research and development for the improvement of formal methods and tools with respect to their industrial use. FMICS members, through their strong industry links, have contributed to the gradual introduction of formal techniques into the development cycle of critical systems witnessed over the last 15 years. The working group has addressed verification techniques including model checking, static analysis and abstract interpretation, as well as model-driven development.

**FME** is an independent association incorporated in 1998 for the purpose of stimulating the use of formal methods by industry, promoting international cooperation among researchers and users of formal methods, identifying common interests and making links between research and areas of application. FME organises and sponsors the "FM" International Symposium series.

FMICS has held fifteen international workshops, and these have always been open to contributions from outside the ERCIM community. Strong links have been maintained with other organizations, including FME. In 2009, the FMICS workshop was held during the FM week, a special gathering of events organised by FME.

In 2003 FME initiated a series of "Industry Day" (I-Day) events associated with the FM Symposia, in order to provide a forum for industrial practitioners in formal methods to exchange information on development in applications and tools. The I-Day events have consistently attracted a large and varied audience of both researchers and practitioners.

Wishing to build on their shared interests and membership, FMICS and FME state their intention of collaborating to hold an annual joint industry-focussed event, which may take place as part of the FMICS International Workshop or as I-Day in an FM symposium. All aspects of any such joint event will be agreed annually in advance and the event will proceed only with the consent of both parties. The costs and benefits of any such events would be split between FMICS and FME, subject to agreement. Both parties commit themselves to promote the event widely.



A Fantechi  
Chair, FMICS



J S Fitzgerald  
Chair, FME

## **Report on the SCORE 2011 Contest: the Second Student Contest on Software Engineering**

SCORE 2011 is the second iteration of a team-oriented software engineering contest that attracts student teams from around the world, culminating in a final round of competition and awards at the International Conference on Software Engineering (ICSE) held in Waikiki Honolulu, in May 2011.

The purpose of SCORE is to foster *software engineering* in university courses, unlike similar contest that instead adopt a narrower view focused on programming; hence, the contest has been designed to fit well in the context of software engineering project courses. An instructor or student team can choose from among several project proposals, each scoped appropriately for a team of undergraduate or M.S. students to complete in an academic term or semester. In addition to an opportunity to compete with other student teams from around the world, participants receive valuable feedback from leading software engineering researchers from academia and industry, who evaluate the overall project.

Details about the organization of the contest, including the Program Committee, the list of available projects, the evaluation process and the contest timeline are available on the contest web page <http://score-contest.org/2011>.

This second iteration built on the success of SCORE 2009, greatly expanding the number and geographical distribution of student teams, including many of very high quality.

As for SCORE09, the SCORE11 organizers proposed that FME sponsor the contest, to foster the collaboration between the software engineering and the formal methods communities. FME accepted to sponsor also this second edition of the contest, and a special award was given to a team “for outstanding exploitation of formal methods in a project”.

### **SCORE figures**

SCORE 2011 drew registrations of 94 student teams from all around the world (48 universities of 22 different countries), primarily in university software engineering project courses. These resulted in 55 submissions of summary reports, each evaluated by the SCORE program committee, who selected 18 student projects for a second round of competition. Those 18 projects went through a second rigorous round of reviewing, considering all project artifacts submitted by the teams, and from those just 5 finalist teams were selected. Representatives of those five teams were invited to attend ICSE, where the final competition included presentations, posters, and demonstrations.

Of the 55 submissions, 14 used, in some form or another, formal methods (in fact, not all teams that declared to use FMs actually used them, and some teams that did not declare to use FMs actually did so). 2 projects using FMs were selected for the second evaluation phase; of them, 1 was invited to attend ICSE 2011.

## Finalists and winners

The five finalist teams (including the one that used FMs in their development) invited to attend ICSE 2011, and which received financial support (2000\$, plus free registration to ICSE for one student representative) to help offset travel costs, were the following:

1. Fateh Muhammad Bilal Baloch, Josip Petric, Igor Bucec, Sandi Winter, Xiaoyan Wan and Sureshkumar Yadav, Mälardalen University, School of Innovation, Design and Engineering, Sweden, and University of Zagreb, Faculty of Electrical Engineering and Computing, Croatia
2. QReative: Daniel Colomer Collell, Oriol Collell Martín, Xavier Oriol Hilari and Kenan Rhoton, Universitat Politècnica de Catalunya, Spain
3. Team Scetris: David Bialik, Julian Fleischer, Hagen Mahnke, Konrad Reiche and André Zoufahl, Institute of Computer Science, Freie Universität Berlin, Germany
4. Yi Li, Hang Yang and Huanan Wu, National University of Singapore.
5. Augustin Petrovic, Manish Kungwani, Pratik Barkade, Omar Jaradat, Uma Shankar, Siva Eslavath and Umer Waqar, Mälardalen University, School of Innovation, Design and Engineering, Sweden, and University of Zagreb, Faculty of Electrical Engineering and Computing, Croatia

All 5 finalists did an excellent job with their projects. They were all recognized during an award session at the ICSE conference and they all received official certificates testifying of their achievement. Two of the teams were also recognized as winners in the “Formal Methods” and “Overall” categories. The two winner teams, which received, in addition to the aforementioned certificates, a cup were:

- **Overall winner:** Team Scetris: David Bialik, Julian Fleischer, Hagen Mahnke, Konrad Reiche and André Zoufahl, Institute of Computer Science, Freie Universität Berlin, Germany
- **Formal Methods winner:** Yi Li, Hang Yang and Huanan Wu, National University of Singapore.

## Conclusions, and a look to the future

This second edition of SCORE built on the already good success of the first edition and achieved many of the goals that one expects from a second edition: numbers were up as far as it concerns both registrations (from 55 to 94) and submissions (from 26 to 55). Quite naturally, the diversity in terms of universities involved and countries represented also increased. By all accounts, the quality of the submissions also increased (as evidenced by the fact that 18 teams were selected for the second evaluation phase), and selecting the winners, especially the “overall” one, required lengthy discussions. With respect to the first edition, also, the number of participating teams employing formal methods increased, though those who were proficient using them was, at best, a handful.

There are indications that the third edition of the contest will be organized as part of ICSE 2013 in San Francisco.

As awareness of the contest increases around the world, each new edition should of course strive to better the previous one in terms of number of the participants, of the involved universities, and of the represented countries. In this sense, despite the already notable success of SCORE11, there is of course room for improvement (for example, continents such as South America, Africa, and Oceania were still very much under-represented in SCORE11).

If an “FM award” will again be part of SCORE, despite the unabashed support of the contest by FME, there is still ample room for improvement as far as the involvement of the FM community is concerned. Some of the difficulties in involving the FM community are probably a consequence of the difficulty of using SCORE projects as projects in FM classes, given the clear slant towards software engineering of both contest and projects. However, there are clear synergies between the SE and FM domains; also, the rules of SCORE highlight that, while to compete a team must touch all phases in the software development process, more attention can be paid to specific aspects of the process instead of others, which allows FM instructors to somewhat tailor SCORE projects to the needs of their classes. Hence, increasing the number of teams originating from FM classes is surely a very attainable goal.