

## FORMAL METHODS EUROPE

### Minutes of the 18th Meeting held at ONERA-CERT, Toulouse on 15 March 1997

<b>Present:</b>	Angela Alapide	<b>Apologies:</b>	
	Göran Anger		Manfred Broy
	Dines Bjørner		Heiko Doerr
	Tim Denvir		Marie Claude Gaudel
	Eric Delalonde		Cliff Jones
	René Jacquart		Jan Storbank Pedersen
	John Fitzgerald		W. Reisig
	Peter Gorm Larsen		Micheal Mac an Airchinnigh
	Peter Lucas (Chair)		
	Karl Meinke		
	José Oliveira		
	Nico Plat		
	Kees Pronk		

The committee was welcomed to ONERA-CERT by René Jacquart.

#### Item 1: Minutes of the 17th meeting

##### Matters Arising

**Action 10/5:** Provide a periodic report on FME to the Commission. Peter Lucas, Kees Pronk and Tim Denvir will put this in hand soon. **Discussed under Item 11**

**Action 13/3:** Peter Lucas to write to members of the committee who have not attended the last four meetings. Tim Denvir to derive the relevant list of members from the records of minutes. **Discussed under Item 11**

**Action 16/4:** Tim Denvir will forward guidelines for national web pages to those who have volunteered to supply them (PL, PGL, M-CG, KS, GA, NP). **Completed**

**Action 16/5:** Cliff Jones to incorporate a pointer from the FACJ web pages to the FME web pages. **Completed**

**Action 17/1:** Dissemination action teams to ensure co-ordination between actions, in particular to provide links to each other's web pages. **Continues TD, ED, PGL**

**Action 17/2:** Adjust FME'97 Symposium budget to split the deficit due to the change in travel support for the PC meeting. **Continues PL, KP**

**Action 17/3:** Produce a more detailed budget plan by the next physical FME Committee Meeting. **Completed**

**Action 17/4:** Kees Pronk to make a proposal regarding the construction of a legally constituted organisation for FME. **Completed**

**Action 17/5:** DB assisted by RJ will initiate finding chairs for the industry-specific sectors; DB will start to establish a programme committee and other structures for the event, in particular exploring the feasibility of 3 or 4 separate sector oriented sub-programmes, and contacting some of the other organisations hoped to be associated with the event such as ACM and IEEE. In this he will be assisted by FME (PL). RJ will initiate the organisational and local planning in particular contacting possible local industrial associates, by the next FME physical meeting in 6 months. **Continues**

**with progress DB, RJ, PL:** It was felt to be too early at this stage to find chairs. The 22/23 February edition of the FM'99 working paper suggests settling the choice of chairs by the time of the FME'97 Symposium in Graz.

## **Item 2: Short summary of electronic meeting, Feb. 5 to Feb. 14, 1997**

The following material was presented by Peter Lucas:

**Electronic Meeting: Feb. 5 - Feb 14** Agenda items discussed:

1. FME'97
2. FME'99
3. Form of electronic meetings
4. pending actions
5. investigation of the legal structure of FME

People sent comments to me. During the meeting period, I distributed twice summaries of the contributions and the actual comments grouped according to the agenda items.

I did not have time for a final resume of the meeting. I reported about three additional comments I had received after the last summary.

These were from Heiko Doerr, Jonathan Bowen and Manfred Broy.

- Heiko Doerr had some comments concerning FME'99.
- Jonathan Bowen: want to involve ProCoS in the FME'99 activity, for example by co-locating a ProCos meeting (I think this is a good idea).
- Manfred Broy wants to make sure that FME'99 is emphasises the praxis orientation of FMs. Manfred had an extensive discussion on this subject with Dines in Macau.

Over all I believe the meeting was useful. We have some progress concerning the future legal status of FME. We got a lot of input to the FME'99 issues. It acted as a reminder on pending actions to everybody.

## **Item 3: Financial report**

It was noted that the FME'96 Symposium in Oxford had raised a substantial surplus of over 1 million BEF. The report (Appendix A) was accepted.

## **Item 4: FME'97, state of preparation**

Peter Lucas reported on the state of preparation for the FME'97 Symposium in Graz.

- There has been progress on the preparation of a more detailed budget. More work was required.
- Tenders for the banquet had been received.
- A reception has been offered by the City of Graz.
- Local sponsors had been approached, e.g. Austrial Airlines. No responses had yet been received, but there would be some subsidy for the invited speakers from TU Graz. Sponsorship for the organisation office was available in kind (photocopier, fax etc.)

- The OC had been working on acquisition of equipment for tools demonstrations. Some reluctance had been shown by local suppliers, but equipment would be sought from PL's own institute and the Computer Service at TU Graz.
- The call for participation was in preparation, awaiting the programme. A logo had been designed.
- Five tools had been registered for the exhibition so far. Some obvious tools will be followed up to encourage registration.

John Fitzgerald reported on the Programme Committee's progress. A report is attached (`LATEX`source) as Appendix B. The poor industry-academic ratio of submissions was a cause of concern.

## Item 5: FM'99 Toulouse

Dines Bjørner began by commenting that Toulouse was a well-chosen venue. He drew the committee's attention to the drafts of the working paper which had been circulated following the 17th Meeting. Since the last issued draft there has been some changes to the aims and objectives. Support had been received from a number of organisations including strong support from ETAPS, the President of the IEEE Computer Society, the President of IFIP and IFIP TC1, TC2 and TC10.

Support had been received from most major societies in the Western world. However, Japanese support was required and was being sought. Pointers are sought to other groups who might be encouraged to co-locate conferences. The latest version of the working document contained copies of communications received since mid-February from Space Software Italia, Don Sannella (regarding ETAPS), Jonathan Bowen (considering co-location of a ProCoS event), Mike Hinchey (considering co-location of the Z User Group); Jeanette Wing was working with SigSoft and David Garlan with SigPlan.

It was felt that a one-page "flyer" advertising the symposium should be developed for distribution at forthcoming events.

Dines Bjørner raised six specific issues:

1. Should the proposed event go ahead?
2. What precisely is meant by organising the event in collaboration with other groups (ACM and IEEE in particular)? Should financial support be sought in return for some influence on the organisation and content?
3. What should be the target attendance for the event?
4. How should the overall budget be constituted (review René Jacquart's budget)?
5. What should be the conference structure in terms of tracks, user groups, tutorials etc?
6. Should a peer group be set up to review and advise on plans?

## Discussion

Peter Lucas asked if FME wished to collaborate with others to the extent that we might lose some control over the event. Dines Bjørner suggested that it may be possible to gather support which does not entail a financial contribution, for example having access to other organisations' media at cost, but without administrative support from the headquarters.

Kees Pronk doubted FME's ability to coordinate an event of this size and complexity without a two-tier structure. Dines Bjørner stressed that the current proposal is based on such a structure.

Peter Lucas asked about the nature of the proposed meetings in specific application areas. How would these be organised. Dines Bjørner responded that these could be seen as a scaling-up of the FME Tutorials, but sector-specific. It would be necessary to find coordinators. The sector-specific meetings should be seen to add value, money and people to the main event.

Eric Delalonde raised the issue of the local hosting organisation. He recalled the strong motivation of the local organisers of FME Symposia in Barcelona and Oxford. Did CERT-ONERA have the same tradition? René Jacquart responded that the main issue is one of targeting, preparing and budgeting the wisely for the proposed event.

Speaking to the draft budget, René Jacquart noted that the Palais des Congres was responsible for a high but fixed proportion (one sixth) of the overall cost. This is based on the cost of the whole building. The committee was invited to consider if the event could retain a traditional "academic atmosphere" (cheap, organised on a campus, academic support) and still keep the desired level of industrial involvement. Alternatively, the Palais des Congres represented the usual professional level of conference. The discussion moved on to the costs of various possible venues.

Dines Bjørner described his goal of getting 100 to 150 chairs of Computing Departments to attend the event. Their motivation would primarily be to meet other participants, not only academics, but the senior industrial representatives with whom academics need to meet.

Peter Gorm Larsen commented that he was not concerned about the organisation of the event and the attraction of participants. On the contrary, he was confident that Dines Bjørner would be able to deliver exactly the sort of event described. He was simply concerned about the level of financial risk to FME.

It was suggested that a statement of fixed and variable costs be developed so that the risk could be assessed for various numbers of participants.

Dines Bjørner raised the subject of the proposed date for the event. In particular, he sought a move into July/August, as this would be more suitable for ensuring participation from as wide a range of countries as possible.

Peter Lucas was concerned that the FME Symposia should not stagnate. On the other hand, this was to be a very different kind of event. Dines Bjørner stated that there was a consensus for another kind of FME event. We want to open up to other groups in the same way that the original VDM Symposia expanded to become the FME events. Can we keep industrial interest in this technology if we go for cheaper academic provision of the 1999 event?

Regarding costs, René Jacquart reminded the committee that the problem was not the level of cost per participant but the overall financial risk. Tim Denvir proposed that we choose the target number of delegates so that the risk does not exceed the FME reserves (largely the profit from the Oxford Symposium).

Dines Bjørner commented that Kees Pronk's original point was important, namely that one group will have to take top-level responsibility. Although responsibility for organising application sector events would rest with the relevant organisers, there would be new exposures for FME.

It was felt that an e-mail exchange was required, focusing on the outstanding issues, beginning with the risk analysis based on fixed and variable costs. Kees Pronk noted that care should be taken in deciding the contribution to be made by application groups to the central funds.

The original Six Issues were revisited (see beginning of Item 5).

1. Should the proposed event go ahead? The answer was "Yes".
2. What precisely is meant by organising the event in collaboration with other groups (ACM and IEEE in particular)? Should financial support be sought in return for some influence on the organisation and content?

**Action 18/1:** DB to pursue the issue of balancing financial contribution and influence over content.

**Action 18/2:** DB to seek support from the relevant DGs at the European Commission.

3. What should be the target attendance for the event?

It was noted that industrial participants might only attend for a few days out of the whole event. The overall target attendance should be vary around 500, but this is dependent the financial risks associated with this level. DB agreed to identify the target groups of participants and define a package for each target group.

The possibility of using weekends would be retained if overall programming proved too difficult.

**Action 18/3:** DB to write notes on

- (i) organisational interfaces (how the committees will work together);
- (ii) the modalities of participation for the relevant sub-groups of participants (students, chairs of departments, application groups, researchers etc.); and
- (iii) a description of the overall programme.

by the end of April 1997 for delivery to the interested subgroups. Responses from interested parties would be sought by June with the aim of completing a budget which takes account of risk levels by the end of June.

**Action 18/4:** BTM, DB agreed draft of an A4 flyer.

**Action 18/5:** All members to obtain the latest version and distribute it at any meetings attended.

#### 4. How should the overall budget be constituted (review René Jacquart's budget)?

The question of who will take overall financial responsibility was felt to be closely related to the question of FME's legal status. As far as FM'99 is concerned, the Palais des Congres is happy to deal with FME in its present form, given a banker's reference. However, Tim Denvir urged the committee to consider establishing its legal status as a charity. He expected that this would be cheaper in the UK than in the Netherlands (as suggested by Kees Pronk).

Kees Pronk had determined that the cost of obtaining legal status in the Netherlands was cheaper than originally stated, but FME has been advised against this course given its international and tax exempt status. An alternative, more expensive, option may be pursued.

**Action 18/6:** BTM and KP to report to the committee on UK charitable status with regard to the risk of a loss in FM'99.

**Action 18/7:** KP, BTM, RJ (cc GA) to bring proposals for incorporation as a legal entity with consideration of the consequences for the organisation of the Symposium.

Göran Anger listed the following four issues which should all be resolved so that the committee has enough information to make a "go or no-go" decision at the next physical meeting in Graz:

- (a) Contractual relationships between the FME Committee and its partners in the venture.
- (b) Organisation and financial commitments.
- (c) Budget and risk analysis.
- (d) A fallback position.

## Item 6: FME dissemination activities

### FM-Guides

Eric Delalonde reported that the Commission reviewer, Mr. da Silva was happy about the status of the video under development. Following his suggestion, the video now has sequences in French and Italian. Material stressing the "human side", conveying a sense of the enthusiasm and character of those involved in formal methods had been added to the video material recently. The aim was to develop two programmes with the Computer Channel.

Regarding web sites, two sites were in development. One, on the Cap Gemini server, plus another faster server, but without all the capabilities of the original site. On these, the reviewer had again been positive but had listed some concerns:

1. a warning about the varying capabilities of browsers and web sites;
2. a request for more information on small companies using formal methods;
3. a recommendation for a wider discussion on the application of mathematics in other domains and images other than equations!

Regarding trade shows, the products of the action had been exhibited at a number of trade shows. Cap Gemini have undertaken to maintain and keep up-to-date both video and web-site products. Dines Bjørner would elicit extra material from UNU/IIST for dissemination.

### **FMEIndSem**

Peter Gorm Larsen reported that the first tour was a considerable success. The Munich event had seen 60-70 participants, mostly in avionics. The Copenhagen seminar had about 30 participants, mostly unknown to the organisers. Participants at the Swedish event were largely known to Logikkonsult (it was felt to have been a mistake not using the ENCRESS list). The event in Finland had largely involved academics with 13 industrial participants. User groups were starting in Germany and Denmark. There was greater reluctance in Sweden and no sign of a group developing in Finland.

Eric Delalonde and Göran Anger felt that we should be thinking more across language and method boundaries. People are not so aware of the range of formalisms and tools available.

### **FMEInfRes**

Tim Denvir reported that the next issue of the Newsletter would be ready soon. There were now 61 applications and 51 tools in the databases and 8 national web sites. The project had been extended to the end of September to include a final meeting at the Graz Symposium.

## **Item 7: Future Directions for FME**

Göran Anger presented material on the European Commission's leveraging actions (Appendix C below).

Karl Meinke suggested there would be value in an economic analysis of the field of formal methods - either a report of general interest (like the reports in the London Financial Times) or a more "up-market" study. He asked if such a report exists for formal methods as an area of financial activity, as this would be the sort of valuable report with which one could approach sources of venture capital.

Göran Anger reported that there is some analysis of CASE and CAD tools available but not formal methods as such.

Karl Meinke wondered if it would be possible to get an EU-sponsored action to pay for a study by a professional firm. He commented that we may get an answer we do not want to hear. Some concern was expressed that such a report might be misinterpreted, although it was recognised that the value of such a report, even with a negative result, would be to highlight the impediments to take-up of formal techniques.

Göran Anger commented that the study could be a documentary one, given the amount of data available from existing studies. Kees Pronk noted that some care should be taken in formulating the question to be answered by such a study. The term "formal" is, after all, open to a very wide range of interpretations.

**Action 18/8:** All members to make initial suggestions for leveraging actions.

It was suggested that the Commission would like to see more FME involvement in leveraging actions and less association with the Symposium. The committee should therefore consider if it is distributing its effort wisely among its tasks. It was also pointed out that work which was formerly supported by FME is now having an effect in industry and this connection should be made clear in reports and publicity for the committee's work.

Dines Bjørner drew a parallel between how he sees FME's future role and the Human Genome Project. FME could initiate a series of projects to develop the "laws" or underlying theories of a range of application domains. To develop such theories could take decades, and FME should be doing this work for the industries, not the Commission.

Karl Meinke was concerned at the lack of an appropriate trade fair for tools providers. Dines Bjørner

suggested that some such shows exist and wondered if this was an effective means of improving the take-up of formal techniques. Instead he saw developments in specific application sectors as the way forward.

**Action 18/9:** KM to report to the committee on suitable trade fairs for tool suppliers.

## **Item 8: Reports on other FME activities**

This item was omitted.

## **Item 9: Electronic meetings, logistics**

There was a discussion of the first electronic meeting held earlier in the year, on which Peter Lucas had already reported.

The spread of the meeting over ten days had resulted in a low level of participation. In an electronic communication, Kari Systsä had suggested setting aside a single day. Another suggestion is to use a forum. Others on the committee were much more positive about the value of electronic meetings.

## **Next meetings**

The next meeting would be electronic, held in the week beginning 16 June. The following meeting would be at the Symposium in Graz. The Graz meeting's main item of business would be to take the "yes/no" decision on FM'99.

## **Other business**

There was a brief discussion of the committee's periodic report. For the time being, it was felt that a short covering report, plus the minutes of meetings would form a sufficient report to the Commission.

## **0.1 Summary of Actions**

### **Carried Forward**

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Continues with progress DB, RJ, PL: It was felt to be too early at this stage to find chairs. The 22/23 February edition of the FM'99 working paper suggests settling the choice of chairs by the time of the FME'97 Symposium in Graz.

## New Actions

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**Action 18/9:** KM to report to the committee on suitable trade fairs for tool suppliers.

John Fitzgerald  
Secretary, FME  
15 March 1997

## A Report from the Treasurer

Report from the treasurer per 1997-01-01 (period 1996-01-01 .. 1996-12-31):

Actions:

1. Cross-booking between accounts.
2. Paid subsidy for SC22 plenary meeting in London.
3. Received float from Oxford conference.
4. Arranged float for FME'97 (Graz) conference.

**Account yielding interest:** (amounts in Belgian Francs (BEF))

Date	Description	BEF	
		debits	credits
1996-01-01	Beginning Balance	744.497	-
1996-04-29	Cross-booking	300.000	-
1996-12-31	Interest	29.250	-
1996-12-31	Ending Balance	-	1.073.747



**Regular account:** (amounts in Belgian Francs (BEF) and ECU (XEU))

Date	Description	BEF		XEU	
		debits	credits	debits	credits
1996-01-01	Beginning Balance	441.374	-	2008	-
1996-04-29	Cross-booking	-	300.000	-	-
1996-04-29	Subsidy SC22 meeting	-	9.931	-	-
1996-08-23	Received from Oxford	1.366.982	-	-	-
1996-03-09	From BEF to ECU	-	116.868	2992	-
1996-03-09	Costs	-	639	-	-
1996-03-09	Float to Graz	-	-	-	5.000
1996-12-31	Interest	2.945	-	-	-
1996-12-31	Costs	-	264	-	-
1996-12-31	Ending Balance	-	1.383.599	-	0

**Financial overview per 1996-12-31** (amounts in Belgian Francs (BEF) and ECU (XEU))

	BEF	XEU
Account yielding interest	1.073.747	-
Regular account	1.383.599	-
Float to FME '97 (Garz)	-	5.000
Total	2.457.346	5.000
Grand total (approx)	2.636.025	-

BEF 100.000  $\approx$  DFL 5.440  $\approx$  DM 4.874  $\approx$  £1,828  $\approx$  ECU 2,640  $\approx$  DKR 18.940  $\approx$  FF 13.464  $\approx$  \$(US) 3,056

C. Pronk (Treasurer FME) 1997-01-01

## B FME'97 Programme Committee report (14 March 1997)

The 1997 Symposium is being held at The Technical University of Graz from 15-19 September. A programme committee of twenty members has been established and is now reviewing the submissions. The reviewing process is organised from Newcastle by JSF with administrative support provided free of charge by the Centre for Software Reliability.

### B.1 Profile of Submissions

The closing date for submissions was 17 January but, as usual, the majority of submissions arrived in the week following that date. The twenty PC members have been sent papers for review and reports are now arriving back at Newcastle. There were a total of 97 submissions.

... by category

Authors were, as usual, asked to categorise research papers as follows:

1. Industrial application
2. Research on existing methods or extensions to existing methods
3. Theory

Of the 97 submissions, 17 did not state a category. The breakdown is as follows, where I have assigned a category to those papers which did not state one and taken the first category of those papers which suggested two:

Category 1 9  
Category 2 54  
Category 3 29  
Tutorials 5 plus 2 informal offers and 1 out of scope

There is a tendency to classify in the direction of theory. I would have classified slightly more into Category 1 (13; 52; 27).

### ... by country

Submissions by country of corresponding author:

UK	23	Finland	2
Germany	17	Japan	2
France	11	Macau	2
USA	9	Portugal	2
Ireland	6	Barbados	1
Canada	5	China	1
Australia	4	Denmark	1
Italy	3	Israel	1
Austria	2	Netherlands	1
Brazil	2	Russia	1
		Slovakia	1

### ... industry/academic

Submissions by institution of corresponding author:

Industry: 16  
Academic: 81

## B.2 PC Meeting

There will be a physical PC meeting on 5-6 April 1997 at Newcastle, with eleven members attending. Authors will be notified in the week following the PC meeting.

## C Leveraging Actions for Software Technologies

- Special type of Preparatory, Support and Technology Transfer activities in the Software Technologies Domain.
- Needed to facilitate the uptake of technology resulting from the implementation of the Software Technologies workprogramme.
- Should provide a suitable mechanism to build confidence in almost mature (generic) technologies, as well as to characterize, enable and promote their deployment.

## Goals

Leveraging actions would typically contribute to achieving the following goals:

- ensure continuous and effective user input and feedback throughout the programme
- actively expose projects and trial applications to industrial sectors identified or perceived as target clients of their results
- stimulate a greater involvement of user industry sectors in up-take of = IT programme results
- effectively disseminate information about results (of both RTD projects and trial applications)

## Type of actions

Two lines are considered:

- a user centered line (i.e. addressing projects from user/customer perspective)
- a market centered line (addressing the exploitation perspective)

### User centered line

#### Aims:

- adoption of new maturing technology by users ("buzzwords" are: facilitate, accelerate, promote, raise awareness)
- help software technology providers to gather feedback and requirements from users

#### May consist of:

- organize events targeted at specific industry sectors
- assessment and dissemination of project results
- liaison with user associations
- training, etc

### Market centered line

- help software technology providers and users in characterizing
  - business drivers for ...
  - impediments to ...
  - ... the uptake of their maturing technology offer.

## Participation

- Programme is open to all legal entities - i.e. people and organisations - both large companies and SMEs - universities, higher education institutes, research organisations, etc.
- Participation from at least two member states is required.

## Financial and contractual

**Contract:** a simplified version of the model RTD contract

**Eligible cost:** • administration cost of the organizing participants

- travel cost
- cost for organizing meetings, seminars, etc
- additional cost for work excluding overheads

Funding can be up to 100% of eligible cost.

**Submission deadline:** Proposals for Leveraging Actions can be submitted at any time.