

# EEUG News

The newsletter for the Educational Electronic Computer Aided Design users

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## News from the ECAD Educational User Group Committee

### In this issue

1. Chairman's welcome
2. Treasurer's report
2. RAL/EEUG advisory committee
3. September 2001 EEUG workshop
4. Workshop programme
- 5-7. Workshop abstracts
8. Registration form for the workshop
9. EEUG Committee and Website

### CHAIRMAN'S WELCOME

Welcome to the latest edition of the EEUG Newsletter.

The next major event in the EEUG calendar is the September workshop to be hosted by Rutherford Appleton Laboratories at the Cosener's House, Abingdon on the theme of "*Computer based teaching, learning and assessment for Design Aspects of Electronics and Microelectronics*". As you will see from the attached information a number of interesting and highly topical presentations have already been offered. If you have any experiences in this area that you would like to share with your colleagues in the wider ECAD community then I urge you to contact me as soon as possible. Contributions don't have to be full-blown scientific papers, we want to encourage the interchange of ideas and good practice in an informal setting to help us all in this critical area of activity for all those in the teaching profession. Even if you are not able to offer a contribution please put 19/20<sup>th</sup> September in your diary now and

register for what promises to be an interesting workshop.

Due to resignations and retirements from the EEUG committee there are currently two vacancies and we are now urgently seeking new members. The constitution specifies that members may serve for no more than three years. After the retirement of the previous Chairman this passed to me as Vice Chair and my role as RAL liaison officer has been passed to David Holding. In September we will be holding the AGM and a further four new Committee members will be needed since the treasurer, the secretary, the RAL liaison officer and myself will, by then, all have reached the end of our term of office. Since this will leave just two committee members we are concerned about the future of EEUG if we fail to find new volunteers in the immediate future. We hope that potential members will see this as an opportunity to contribute to a prestigious user group with an international profile. Workshops attract professionals in the HE sector with a wide range of interests in ECAD and associated subject areas. If you know of anyone, including yourself, who would be interested in contributing to the work of the EEUG then please contact myself or any other member of the committee.

In the meantime I look forward to seeing you again or for the first time at the Abingdon Workshop.

Jon Travis [j.r.travis@shu.ac.uk](mailto:j.r.travis@shu.ac.uk)

## TREASURER'S REPORT

EEUG's finances continue to be healthy. The reduction in income due to running only one workshop per year has been offset partly by a reduction in the number of committee meetings from four to three per year and partly by the vacancies on the committee. The latter is a saving we'd rather not be making, of course.

Due to EEUG's constitutional obligation to operate on a not-for-profit basis, reserves are not allowed to build up without good reason, and the present balance in the deposit account is a little larger than mere good housekeeping requires. We intend purchasing a second-hand laptop with internal CD-ROM drive, for use in keeping the master copy of EEUG's "books", mailing lists, registration details and the like. The laptop will also be available at workshops for use with PowerPoint presentations. The final role of the laptop is to make the ceremonial handover of responsibility from outgoing to incoming Treasurer more significant!

For this September's workshop, we have made a modest increase in the charge for the full overnight package, while keeping the day-only rate unchanged. The increase is the first for many years, and reflects the slightly more upmarket venue. Any surplus from the workshop will not be used to provide four-course working lunches in Paris for subsequent committee meetings, but members are welcome to contribute freely to a fund with that aim.

Tim Forcer [tmf@ecs.soton.ac.uk](mailto:tmf@ecs.soton.ac.uk)

## RAL/EEUG ADVISORY COMMITTEE

The RAL/EEUG advisory committee met on 2 May 2001 at the Cosener's House, Abingdon. Those present were John McLean and John Morris representing RAL with Jon Travis and David Holding representing EEUG. After John McLean's update on Europractice the main topics discussed were the use of co-ware including EEUG's role as a focus for users, the need for a road map of package availability, applicability, suitability and fees, the format, content and direction of the RAL Roadshow and the possibility of including optical/photonics CAD within the EURO PRACTICE portfolio. A request was also made from RAL that when EURO PRACTICE software is used to support work that is subsequently published this is acknowledged in the publication. The EEUG committee are in full support of this request.

At the September workshop at Cosener's House John McLean will present an update on EURO PRACTICE developments and RAL support staff will be present with demonstration software in their roadshow exhibition.

Members are reminded that the advisory committee exists to represent the views of the user community. If there are any issues that you may wish to have raised at RAL/EEUG meetings should be communicated to either Jon Travis or David Holding.

David Holding  
[d.j.holding@aston.ac.uk](mailto:d.j.holding@aston.ac.uk)

## **Educational ECAD User Group      Autumn Workshop 2001**

**Cosener's House, (RAL), Abingdon, 19/20 September 2001**

*"Computer based teaching, learning and assessment for Design Aspects of Electronics and Microelectronics"*

The 25<sup>th</sup> EEUG Workshop will be held in the Cosener's House, Abingdon on the 19<sup>th</sup> and 20<sup>th</sup> of September 2001. This workshop is intended to provide an opportunity to find out about current and recent projects in academic institutions addressing issues in Computer based teaching, learning and assessment in the areas of Electronics and Microelectronics. To date, the following presentations have been confirmed:

- **CAA of laboratory work and assignments in WebCT**, *Professor Erik Dagless and Gosia Mendrela, University of Bristol*
- **A Collaborative Augmented Reality Architecture for Teaching Top Down Design with VHDL**, *Martin White, Fotis Liarokapis, Costas Kostakis, Emmanuel Jay and Paul Lister, University of Sussex*
- **Evaluation of the use of CBL in electronic engineering courses**, *Fiona Lamb<sup>\*</sup>, Steve Rothberg<sup>\*</sup>, Elaine Smith<sup>+</sup> and Barry Beggs<sup>+</sup>, <sup>\*</sup> EASEIT-Eng, <sup>+</sup> Glasgow Caledonian University*
- **Techniques for embedding circuit simulations into Electronics Design Courseware** *Saravanan Solaimalai and Professor Peter Hicks, UMIST*
- **Developing a testbank of questions for electrical and electronic engineering** *Su White and Hugh Davis, IAM: Learning Technologies, The University of Southampton*
- **Integrating Computer Aided Learning into OU Teaching Material** *Bernie Clark, The Open University*

The RAL Roadshow will be demonstrating relevant EDA tools during coffee breaks and over lunch on the Thursday and in the afternoon John McLean will give an update on Europractice Software Services for the academic community. There will also be the launch of EDEC V5 and a general update on the EDEC CAL software from Peter Hicks.

The cost for overnight attendees will be £70, which includes dinner and accommodation on the 19<sup>th</sup> and breakfast, lunch, tea and coffee on the 20<sup>th</sup>. The cost for attending only for the day on the 20<sup>th</sup> will be £35, which includes lunch, tea and coffee.

Please post or email the following registration form, with payment documentation, to the EEUG Treasurer (Tim Forcer - [tmf@ecs.soton.ac.uk](mailto:tmf@ecs.soton.ac.uk)), in order to register for the workshop. The advanced booking terms and conditions for overnight accommodation at Cosener's require us to confirm numbers at a relatively early stage. For this reason we would appreciate return of booking forms by the deadline shown. Although we will try, we cannot guarantee accommodation if forms are received late.

Please circulate this information to your colleagues. We hope you will be able to join us in Abingdon for what promises to be a very interesting workshop.

*Dr Jon Travis (on behalf of the EEUG committee) [j.r.travis@shu.ac.uk](mailto:j.r.travis@shu.ac.uk)*

# 25<sup>th</sup> Educational ECAD User Group Workshop

Rutherford Appleton Laboratories, Cosener's House Abingdon 19/20 September 2001

*"Computer based teaching, learning and assessment for Design Aspects of Electronics and Microelectronics"*

## Provisional Programme

### Weds 19<sup>th</sup> September

- 4.00 - 6.00 p.m. Registration desk open at Cosener's House, 4.00 p.m.  
7.00 for 7.30 p.m. Dinner  
8.30 p.m. Evening presentation - To be confirmed.  
Bar

### Thurs 20<sup>th</sup> September

- 7.30 - 8.30 a.m. Breakfast  
8.45 a.m. Registration  
9.25 a.m. Chairman's Welcome - *Jon Travis (Sheffield Hallam University)*  
9.30 a.m. **Developing a testbank of questions for electrical and electronic engineering**  
*Su White and Hugh Davis, IAM: Learning Technologies (The University of Southampton)*  
9.55 a.m. **Techniques for embedding circuit simulations into Electronics Design Courseware**  
*Saravanan Solaimalai and Professor Peter Hicks (UMIST)*  
10.20 a.m. **Evaluation of the use of CBL in electronic engineering courses,**  
*Fiona Lamb<sup>\*</sup>, Steve Rothberg<sup>\*</sup>, Elaine Smith<sup>+</sup> and Barry Beggs<sup>+</sup> (\* EASEIT-Eng, + Glasgow Caledonian University)*  
10.45 a.m. Coffee & RAL Roadshow  
11.15 a.m. **A Collaborative Augmented Reality Architecture for Teaching Top Down Design with VHDL**  
*Martin White, Fotis Liarokapis, Costas Kostakis, Emmanuel Jay and Paul Lister (University of Sussex)*  
11.40 a.m. **CAA of laboratory work and assignments in WebCT**  
*Professor Erik Dagless and Gosia Mendrela (University of Bristol)*  
12.05 p.m. **Integrating Computer Aided Learning into OU Teaching Material**  
*Bernie Clark (The Open University)*  
12.30 p.m. Lunch  
& RAL Roadshow  
2.00 p.m. EEUG Annual General Meeting  
2.15 p.m. Launch of EDEC V5 and EDEC update  
*Peter Hicks (UMIST), Patrick Cheeseman (Oxford Brookes)*  
2.30 p.m. RAL Microelectronics Support Centre update - *John McLean (RAL)*  
3.15 p.m. Tea & Close

## **Workshop Abstracts**

### **"CAA of Laboratory Work and Assignments in WebCT"**

**Erik Dagless and Gosia Mendrela, University of Bristol, Department of Electrical and Electronic Engineering, Bristol, BS8 1UB.**

As part of the process of motivating students to engage in more active learning during laboratory activities we have been developing computer assisted assessment schemes to mark a student's laboratory activities. Students complete their lab books in the normal way but then at the end of the work they complete a quiz built in WebCT. How this was organised and which subjects it has been applied to will be discussed.

In an attempt to automate assignment marking I used the assignment system in WebCT to carry out two tasks in computer architecture. Spreadsheets were used to submit the work and the same spreadsheet did the marking. For an exercise to implement instructions for a small processor all the marking was completed within 24 hours of the submission deadline. How this was done and the plans for the future will be discussed.

### **"A Collaborative Augmented Reality Architecture for Teaching Top Down Design with VHDL", Martin White, Fotis Liarokapis, Costas Kostakis, Emmanuel Jay and Paul Lister, University of Sussex**

This paper describes how we currently teach top down design with VHDL, and how we would like to evolve our current teaching model to see how augmented reality technology can be exploited to enhance this model. We describe a proposal for a new teaching approach that is based on an augmented reality virtual environment in which students, teachers and avatars can interact collaboratively. We present an environment that enables students to learn using virtual multimedia content in which the user can control the style of presentation.

### **"Evaluation of the use of CBL in electronic engineering courses", Fiona Lamb\*, Steve Rothberg\*, Elaine Smith+, Barry Beggs+, \* EASEIT-Eng, + Glasgow Caledonian University**

The use of CBL in electronic engineering HE courses is now fairly well established. The evaluation of the effectiveness of the method has often been either neglected or dealt with in a rather light manner. The EASEIT-Eng project has allowed full, detailed evaluations to be performed across a range of CBL systems with the objective of providing clear guidelines to academics about what is most effective.

### **"Developing a testbank of questions for electrical and electronic engineering", Su White and Hugh Davis, IAM: Learning Technologies, The University of Southampton.**

e3an [1] is a HEFCE funded project to develop a network of expertise in assessment issues within electrical and electronic engineering. A major focus of this project is the development of a testbank of questions for use both in formative and summative

assessment. During 2000, consultants (subject specialists) from the partner institutions met to identify important learning outcomes for their subject specialism, and then produced sets of appropriate questions (and model answers) to assess those learning outcomes. The questions were peer reviewed. It is intended to repeat the whole process again, starting this year, using many more consultants from across the country. The resulting testbank will contain thousands of well-constructed and tested questions and answers from which teachers may select questions appropriate to their students' needs. When the questions are ready for use they must be stored electronically in a form ready for distribution. A significant number of these questions are objective tests (multiple choice, numeric answer etc), and such questions may be delivered both on paper and on-line, possibly using dedicated test engines such as QuestionMark Perception or, possibly by using the test engines within virtual learning environments such as Blackboard or WebCT. Other questions are intended for use in contexts such as example classes and examination revision.

[1] e3an: Electrical and Electronic Engineering Assessment Network. FDTL Phase 3 project (No. 53/99) . Lead by University of Southampton in partnership with Bournemouth University, the University of Portsmouth and Southampton Institute. <http://www.e3an.ac.uk/>

### **"Techniques for Embedding Circuit Simulations into Electronics Design Courseware", Saravanan Solaimalai and Peter Hicks, UMIST**

The integration of web-based simulations into online tutorial courseware can create a very powerful learning environment. The paper shows how electronic design simulations have been incorporated into legacy teaching material that in turn has been adapted for usage on the World Wide Web. Preliminary work focused on use of the Common Gateway Interface (CGI) mechanism to establish communication between an electronic circuit simulator, namely PSPICE, running on a remote server and a web-packaged of an Authorware application (EDEC) running on the client machine. The system provides a graphical front-end that allows users to alter simulation models without any knowledge of the simulation language. Simulation results were processed using the Authorware scripting language before being displayed both in numerical and graphical formats. Optional post-simulation processing can also be provided using the Gnuplot software. Results are presented which illustrate the effectiveness of this technique as an aid to learning the principles of electronic circuit design.

Currently, work is underway to extend and distribute the simulation processing onto several machines with different processing capabilities. This would also provide a heterogeneous distributed environment that mimics the true nature of Web applications. The use of OMG's CORBA specification together with the Java programming language is expected to provide a means of integrating these systems together with the added benefit of platform independence.

**"Integrating Computer Aided Learning into OU Teaching Material"  
Bernie Clarke, The Open University**

The Open University has a Centre for Educational Software (CES) which produces the software and multimedia components for OU courses in collaboration with academic authors, graphic designers, editors and audio visual staff.

As the teaching material for the Digital Communications Course (T305) was being produced, CES developed a set of 44 multimedia packages which integrated with the teaching material. Topics include the alternating bit protocol, Dijkstra's algorithm and time-space switching.

CES has also recently developed some CAL material to supplement the existing teaching material on the Logic Design Course (T323). Focusing on critical topics areas, plus those which students tend to find difficult or tedious, it covers Boolean algebra, Karnaugh mapping, the Quine McCluskey method and State machine design techniques.

## EDUCATIONAL ECAD USER GROUP WORKSHOP

*RAL, Cosener's House, 19th/20th September 2001*  
*Registration Form*

Name: \_\_\_\_\_ (Sex - M/F)

Institution: \_\_\_\_\_

Address: \_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Postcode: \_\_\_\_\_ email: \_\_\_\_\_

Please tick as appropriate:

- I will be attending the EEUG Workshop on the 19th and 20th September 2001, require overnight accommodation on the 19th and enclose a cheque for £70 made payable to EEUG, to cover the cost of the workshop, dinner, accommodation, breakfast, lunch, tea and coffee.
- I will be attending the EEUG Workshop on the 19th and 20th September 2001 and require overnight accommodation on the 19th and enclose an official institution order form or number, which will be invoiced prior to the Workshop by EEUG for £70 to cover the cost of the workshop, dinner, accommodation, breakfast, lunch, tea and coffee.
- I will be attending the EEUG Workshop on the 20th September 2001 only and enclose a cheque for £35 made payable to EEUG, to cover the cost of the workshop, lunch, tea and coffee.
- I will be attending the EEUG Workshop on the 20th September 2001 only and enclose an official institution order form or number, which will be invoiced prior to the Workshop by EEUG for £35 to cover the cost of the workshop, lunch, tea and coffee.
- I will require a vegetarian menu

Please send payment documentation and this form, AS SOON AS POSSIBLE, and at the latest by 20<sup>th</sup> August to:

**Tim Forcer,**  
**Department of Electronics and Computer Science,**  
**University of Southampton, SO17 1BJ**

Receipts will be distributed at registration. If you require overnight accommodation please book as soon as possible since due to the reservation procedures at Cosener's we cannot guarantee accommodation for late bookings.

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### CANCELLATION DETAILS

If you reserve a place but fail to attend the workshop without cancelling your reservation we reserve the right to invoice you for the full fee to cover the costs incurred.

## **THE EEUG COMMITTEE**

Chair:	Jon Travis	<a href="mailto:j.r.travis@shu.ac.uk">j.r.travis@shu.ac.uk</a>
Secretary:	Margaret Fraser	<a href="mailto:m.i.fraser@rgu.ac.uk">m.i.fraser@rgu.ac.uk</a>
Treasurer:	Tim Forcer	<a href="mailto:tmf@ecs.soton.ac.uk">tmf@ecs.soton.ac.uk</a>
Newsletter Editor:	Geoff Lawday	<a href="mailto:geoff.lawday@bcuc.ac.uk">geoff.lawday@bcuc.ac.uk</a>
RAL Liaison Officer:	David Holding	<a href="mailto:d.j.holding@aston.ac.uk">d.j.holding@aston.ac.uk</a>
Other committee members:		
	Jonathan Dell	<a href="mailto:dell@ohm.york.ac.uk">dell@ohm.york.ac.uk</a>

## **THE EEUG WEBSITE**

Don't forget that previous copies of EEUG News, presentations and up-to-date EEUG information is available on your EEUG Website <http://www.eeug.org.uk>

The EEUG Website receives a steady trickle of visitors, even in the dull days when the last workshop is a distant memory and the next is only a gleam in the Chairman's eye. As might be expected visits come from all over the world. The presentations from previous workshops proved the most popular target pages in recent months, showing that the material provides more than a passing interest.