

RE-FLEX *flexible reality centre*



Past newsletters – A historical record

A technology and expertise resource centre combining Lund University, the Technical Faculty and Lund University Hospital working for the benefit of society in the Skåne and Öresund regions where the focus is on people, democracy and solving real-world problems.

www.reflex.lth.se/reflex



The Flexible Reality Centre Newsletter for March 2006.

Phew, I just ran out of time for the February newsletter, there was much to do with proposals and the new VR course.

Lundakarnevalen 2006

Every four years, the city of Lund is blessed with the student carnival which consists of a procession of numerous amusing floats and several days of activities, witty and well performed plays and wot not in the central town area (Lundagård). This year, we will be helping the design of the layout of this area, placement of activity tents, consideration of fire and safety issues, meeting with officials using 3D visualisations to simplify explanations and for marketing the carnival. We will be using our various Virtual Reality skills, and Ludvig Enggård's Lundagård VR model that was made a couple of years ago as part of a GIS/VR project.



Nanco

On the 23rd of March, Nanco (www.nanco.se) will be demonstrating their latest portable Passive Stereo Display system at 13:15 in the Reality Lab, Ingvar Kamprads Design Centre, Sölvegatan 26, Lund. All are welcome to see this cool and affordable technology. See also the attachment to this newsletter.

UNIVA / RE-FLEX collaboration

We are pleased to announce the start of a collaboration project between UNIVA, a Lund University owned company whose task it is to help researchers commercialise their work. The purpose of this project is to establish UNIVA / RE-FLEX as a commercial interest in the area of advanced visualisation, simulation and training using Virtual Reality and related technologies. The expertise and equipment at the University make this unique in the Öresund region. Priority areas will be Virtual Building Environments, Medical Training and Historical Awareness. To read more about Univa, see www.univa.se (only in Swedish).



RE-FLEX executive committee meeting minutes

The latest RE-FLEX executive committee meeting minutes are online (or soon will be) at www.reflex.lth.se/reflex/charter.

Flickor på teknis (Girls in engineering)

The 'girls in engineering' visitors are welcome to the Reality Lab also on the 23rd of March. This is a great initiative at LTH to encourage young women at highschool to become interested in engineering. They will see applications and technology demonstrations. Have a look at www.flickorpateknis.lth.se for more details.

"Virtual Reality (VR) is a technology that can be used in a diversity of application areas such as; architectural visualisation, medical training, historical experiences, educational computer games, town planning, art and product design. It is the imagination that sets the limits. And of course some programming and 3D modelling knowledge. RE-FLEX, the flexible reality centre at Lund University is for the students and researchers to be able to gain access to the exciting VR technology in the various labs around the university and for increasing contact between the disciplines – architects can meet computer scientists, medical students can meet historians, etc. You will be visiting the Reality Lab at Ingvar Kamprads Design Centre and experiencing fun and exciting practical applications of this advanced technology."



That's all for this newsletter, see you again next month, /Roy.



The Flexible Reality Centre Newsletter for January 2006.

Welcome back after Christmas. This month I want to highlight some of the new equipment in the Reality Lab at the Design Centre and what this has for potential

Going from the physical to the virtual...

Our 3D Laser scanner from Picza can be used to scan in small objects. It is about the size of a microwave oven, though somewhat taller, and is affectionately known in the lab as the pizza oven.

This device allows us to scan in basic shapes that can then be used as raw data for further modification. Application areas we have used so far are scanning in machine parts, making models of artefacts from an archaeological dig, and giving us the basic shape of a human arm for using as the basis for teaching about giving blood tests (in the last case, we scanned a plastic model of an arm...)



From the virtual to the physical...

The Z510 3D Printer from Z corporation uses a very fine plaster of paris that is solidified in layers using inkjet technology thus allowing the printing of 3D objects in full, 24-bit colour.

Sometimes, seeing a prototype or a model on a computer screen is not enough, you need to hold it in the hands, feel it, consider its usability and ergonomics or investigate how the bits fit together and make comparisons. In product development, this rapid prototyping machine is therefore very useful, and for medical training, there are also many applications. In the lab, it is used very much in design, primarily by researchers, but also by the Industrial Design students.



The only problem is the white dust that seems to get in everywhere...

And from physical to physical.

The combination of these technologies gives designers and many others new and interesting possibilities. Some examples:

- 1) Scan an object from an archaeological dig, and make a copy that can be handled without fear of it being broken.
- 2) If that object should be made in another material, then casting moulds (negative images of the scanned object) can be made so the new version can be cast in metal or similar materials.
- 3) A designer in Sweden can scan in a prototype, send it by email to a colleague in England, who can print it out in 3D, make some modifications with knife and clay, scan in and send back. Not quite a matter transmitter, but close.
- 4) A blind person can also experience a museum exhibition by being able to feel mockup versions of the original objects.



So, now you know these capabilities exist, feel free to come up with interesting project ideas that we can collaborate on...



Contact **Giorgos Nikoleris** (giorgos.nikoleris@design.lth.se) or **Ola Carlqvist** (ola.carlqvist@mkon.lth.se) for more details.

That's all for this newsletter, see you again next month, /Roy.

Contact: Coordinator – Dr. Roy C. Davies, roy.davies@design.lth.se, 046 2223342



The Flexible Reality Centre Newsletter for December 2005.

Merry Christmas and a Happy New Year

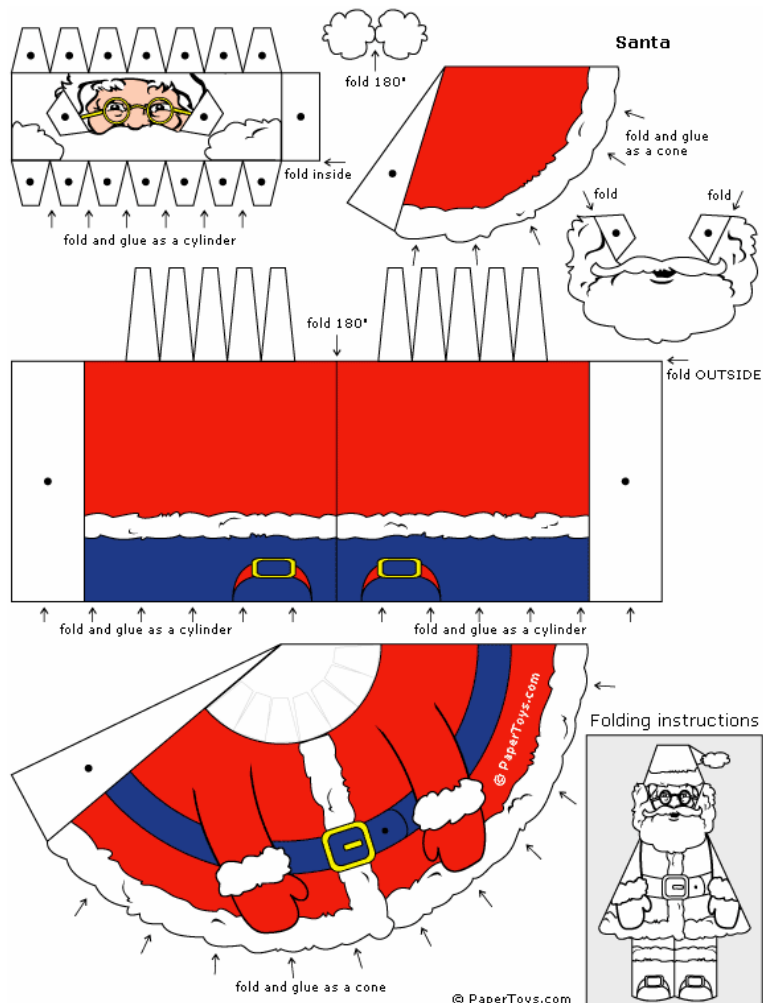
ICDVRAT and Artabilitation

The biannual ICDVRAT (International Conference on Disabilities, Virtual Reality and Associated Technology) will take place in Esbjerg, Denmark, September, 2006. For more information and registration, go to www.icdvrat.rdg.ac.uk. An associated event, the first Artabilitation conference will also take place at the same time, see www.artabilitation.com for more details about that...



Build your own 3D model Christmas Santa...

Some neat 3D paper models can be downloaded from www.papertoys.com. For your amusement and for filling a loose end during the festive season, why not cut out this little santa model and wile away a few hours. For a copy in original size, go to www.papertoys.com/santa.htm.





The Flexible Reality Centre Newsletter for November 2005.

Welcome

Two important events this month in Sweden, the SIGRAD annual conference and the VR FORUM annual conference. I also take the opportunity to present an interesting new project, the use of VR in archaeological building reconstruction.

Minutes from the RE-FLEX management committee meeting

Can be found at <http://www.reflex.lth.se/reflex/charter/minutes/051020/>

SIGRAD conference in Lund reminder, 23-24 Nov (<http://graphics.cs.lth.se/sigrad05/>)

Registration is now open – see the website. Also, we will be opening up the Reality Lab for the Demo Evening. If you have a project to display here, or are a company and want to sponsor a display, let either me or the conference organisers know. The annual SIGRAD conference is expanding to become a major event in computer graphics in the Nordic countries and beyond. Inspired by last year's success we arrange a two-day conference. This year's topic is "Mobile graphics", but the conference is also open to contributions from other fields of computer graphics.

VR Forum 2005 conference in Gothenburg, 21-22 Nov (<http://www.toltorp.net/mosis>)

The Society for Modelling and Simulation in Sweden (MoSiS) is a non-profit society for furthering of the use of modelling and simulation (M&S) in research, development, production, procurement, education, management, and general problem-solving. They have initiated an annual VR conference which this year is aimed primarily at students interested in VR related activities in Sweden.

The use of VR in archaeological building reconstruction (Dalby Kloster)



Archeological reconstructions are based on both finds from archaeological digs and much knowledge of the period by experts and are used often to gain further insight. Various tools are used to help the reconstruction process and to assist the historian or archaeologist to visualize how they think a building or place looked, was used, has developed



and changed, etc. Currently these tools are most often drawings and sketches, knowledge of similar places still standing, photos, etc, and sometimes even 3D computer models. However, much is educated guesses. The goal of this small pilot project is to develop a VR based support tool that will allow the historian or archaeologist to immerse themselves in the reconstruction and thus be able to consider various scenarios that might lead to new insightful inspiration, and thus modification of the reconstruction. The tool must be easy to use and provide functionality that will be useful for this particular user group. A significant part of the project will include user studies and usability tests as well as close collaboration with archaeologists.



At present, we have investigated the idea with the help of a student from the School of Vocational Training, Helsingborg (<http://www.helsingborg.se/ky>). The project Leader and archaeologist is Gunhild Eriksdotter (Gunhild.Eriksdotter@ark.lu.se) with help from myself on the VR side. The student CAD/VR expert is Ulf Nilsson (drulfnilsson@hotmail.com) who has helped take the CAD models that Gunhild had had created for her PhD work by a colleague, Håkan Thorén, at the National Heritage Board in Lund (hakan.thoren@raa.se) and convert these to a form suitable for the VR large screens. We are looking forward to continuation of this project. More pictures and material can be found at www.reflex.lth.se/culture/archreconstruct.



That's all for this month – see you again in a month. /Roy Davies.

Contact: Coordinator – Dr. Roy C. Davies, roy.davies@design.lth.se, 046 2223342



The Flexible Reality Centre Newsletter for October 2005.

Welcome

An unusual thing happened – I just ran out of time to do a newsletter for September, mostly due to several proposals which were due, and the start of term. Sorry for destroying your month, I know how much you all look forward to my little missives.

SIGRAD conference in Lund reminder, 23-24 Nov (<http://graphics.cs.lth.se/sigrad05/>)

Registration is now open – see the website. Also, we will be opening up the Reality Lab for the Demo Evening. If you have a project to display here, or are a company and want to sponsor a display, let either me or the conference organisers know.

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Course Summary

We are slowly building up our selection of VR related courses, currently including the following. There are also several 3D graphics and technology related courses offered by various other departments.

Virtual Reality in theory and practice (coming soon)

The purpose of this course is for the participants to gain a deep understanding of the various aspects of the field of Virtual Reality and Associated Technology in both theory and practice. The course does not, however, aim to teach the participants a particular Virtual Reality programming tool, (though there will be possibilities to explore such tools in the project if desired). For students interested in a Master's project at one of the university's VR labs, this course will be an excellent starting point.

Using Virtual Reality – new possibilities in various application areas

The purpose of this course is to see that the participants gain: Knowledge about various types of Virtual Reality technology and understand the possibilities with the various different technical solutions; an overview of the possible applications within various research areas; and the possibility to use and experience Virtual Environments from different applications.

Modelling for Virtual Reality in Architecture and the built environment

There is an increasing requirement for participation by various actors in the planning of a built environment. Traditional media such as plans and manually drawn pictures give altogether too complex and misleading information. Practical attempts in various parts of the world show that with VR, it is possible to enter much further into an experience and increase understanding for the benefit of all involved. In this course, we prepare the participants in society's construction in the use of such possibilities and to create a conscious and critical attitude to the use of Virtual Reality.

Master's projects

One of our most important resources is the Master's students that help us further various application and technical areas. There is a Master's WIKI for the collection of ideas at www.reflex.lth.se/masters.



That's all for this month – see you again in a month. /Roy Davies.



The Flexible Reality Centre Newsletter for August 2005.

Welcome

On Monday, most people in Sweden were back from their holidays – still a few lapping up the last of the rays in exotic locations before returning to this cooler climate – but we aren't jealous really... A few announcements this month – read on:

Open House: Practicum, Lund Clinical Skills Centre, Lund University Hospital

The new centre, Practicum, at Lund University Hospital which will be specialising in the usage of simulation and visualisation in medical training will be officially opened on the 9th of September (invitation only). On the 12th of September, they will open the doors to everybody else to see their fantastic new facilities and to take part in their vision for specialist and continuation teaching combined with practical training in advanced simulated clinical environments. We look forward to a continued collaboration between the medical and technical faculties under the RE-FLEX umbrella.

Mon the 12th of Sept, 2005, drop-in 9am - 3pm, to Practicum, Kamprad Building, University Hospital in Lund.

Seminar: Fractal Expressionism: A new look at Jackson Pollock's Poured Paintings

by Richard Taylor, Associate Professor of Physics, Psychology, and Art, Department of Physics, University of Oregon, U.S.A (arranged by our colleagues at SLU, Caroline.Hagerhall@pal.slu.se)

Modern art reached its creative peak with the Abstract Expressionist movement. The leading artist was Jackson Pollock, who generated vast abstract images by dripping paint directly onto horizontal canvases. In this talk, I will discuss my fractal analysis of Pollock's paintings and the implications the results hold for art and human vision. This includes the use of science to authenticate art and our recent discovery of a \$10million "long-lost national treasure". In addition, given the ubiquity of fractals in our natural surroundings, surprisingly little research has explored human response to their visual properties. I will discuss our recent preliminary results highlighting the possibility that exposure to fractals could reduce physiological stress and how this might be applied to improve the health of US society, which annually spends \$300billion on stress-related illnesses.

Wednesday 24 August 2005, 13.00 –15.00, Room C, Department of Architecture in Lund, Sölvegatan 24, Architecture Building

Master's Project WIKI

The Master's project WIKI is now up and running (www.reflex.lth.se/masters). I hope that this will act as a central place for advertisement of Master's ideas needing students (and of course for students looking for Master's ideas). If you want to be able to add to this site, please contact me and I shall give you the password.



Executive Committee meeting

The executive committee met on the 17th and discussed the following points: **(1)** RE-FLEX IDC - Business plan and budget; **(2)** new VR course "Virtual Reality in theory and practice" proposed for the autumn term of 2006; **(3)** the new VR equipment being bought in; **(4)** this Autumn's activities (VR within the building industry, VR in medicine and the new facilities at the hospital, VR to increase cultural awareness, Lund University Technical Open Day (beginning of October) and the SIGRAD conference); **(5)** the MiROR project EU proposal (Mixed Reality Operating Rooms); **(6)** a proposal for using VR for complex data manipulation, interaction and analysis together with the parallel computing centre at the university; **(7)** potential cooperation project with SGI and Reading university; **(8)** cooperation project between SWECO and RE-FLEX to further investigate GIS-VR combinations.



That's all for this month – see you again in a month. /Roy Davies.

Contact: Coordinator – Dr. Roy C. Davies, roy.davies@design.lth.se, 046 2223342



The Flexible Reality Centre Newsletter for July 2005.

Welcome

Yes, I know it is still June, but I go on holiday in a couple of days, and I wanted to get this out before then.

VR-GIS, collaboration with SWECO

We are starting a small project with SWECO (www.sweco.se) in order to investigate the possible connections between VR and multidimensional GIS. We will produce a report that will identify key areas of needed research, application, standards, possible partners, and so forth. This material will be used as a basis for new proposals and work groups, both in the local research arena, in the EU, and international. For more details or to give us leads, ideas and tips, please contact me (roy.davies@design.lth.se).

Visualising the construction process of the City Tunnel in Malmö for NCC

<http://www.reflex.lth.se/idc/projects/NCC>

Master's students: Kisse Lindén and Sandra Siewert

This project was begun with a Master's student study in order to investigate how VR might be useful for NCC in showing how the construction process of the new Malmö CityTunnel will proceed. This can be useful as information to interested parties, to have as a display in a public area or on internet, as a presentation material, and so forth. This project developed the basic structure of the Virtual Environment to which further modules can be added at a later stage. We hope to be able to continue and complete the simulation.



Drottens Church in Lund through the ages, a reconstruction in VR from archeological information gleaned from the ruins.

<http://www.reflex.lth.se/culture/kulturen/drotten>

Johan Olsson, Marie Mattson, Rolf Stenbert



The 'Drotten' church was active in the southern Swedish town of Lund for many hundreds of years, but now is just ruins. During its life, it has progressed from a stave church, to several different forms of a stone church to rival the current Cathedral in Lund. The ruins are located under a bank in an underground museum, which is currently closed to the public.

This project aims to start the process of developing Virtual Environments that would make the ruins accessible again to the general public, and furthermore, be able to see in a way not previously possible, how the church was believed to be during its long existence. The VEs will be available both online, and as a display at Kulturen museum.



That's all for this month – see you again in a month. /Roy Davies.

Contact: Coordinator – Dr. Roy C. Davies, roy.davies@design.lth.se, 046 2223342



The Flexible Reality Centre Newsletter for June 2005.

Welcome

This will be the last newsletter before most of you go on summer vacation – I hope the weather picks up, as you can see from the picture from my office window, it is typical south Swedish 'summer' conditions; cold, wet and windy.



Reminder about the Ambient Technology Workshop

Just to remind you, the new cooperation network being proposed at Lund University to perform research and development into Ambient Technology has a workshop on the 8th of June. Please see our previous newsletter for more details.

The workshop is on the 8th of June at 13.00 hours (sharp) in the Industrial Design building. Please indicate your interest by emailing Lambert Spaanenburg (lambert@it.lth.se).

Web Camera in the Reality Lab

Part of one of the new projects in the Reality Lab is to investigate how human movement can be used to control action in a Virtual Environment. We are using a special setup of cameras that, with some programmes developed by our colleagues at Informatics, can be used to read in and interpret full-body human gestures. More on this in a later newsletter. A side effect of this is that there is now a webcam in the Reality Lab which you can connect to at the following address: mkon-pcs1.design.lth.se to see if Nabil (the master's student involved) is working (it is not always on)...



Master's Presentation: Using Virtual Reality to make cultural environments more accessible to people with physical disabilities

Virtual Annelöv, the multiplayer online role playing game developed during this thesis, has several goals. The main goal is to provide an alternative to people with physical disabilities that, thanks to the role playing game and the information spread in the virtual environment, can visit a historical place and learn something about it.

Realized in cooperation with UV Syd - Riksantikvarieämbetet, it is also a way for the archaeologists to get in touch with the public, showing what their work is about and which are the results they can obtain. The game is organized in two sessions: during the first one the user has the possibility to explore the world and search for the cultural content, in the second one it is possible to interpret either a Bronze Age character or an archaeologist. As a matter of fact, Virtual Annelöv is partially the reconstruction of a Bronze Age settlement, excavated during the late 90s (Annelöv, Skåne), and of a little excavation site.



The game engine is a modified version of the open source massive multiplayer online role playing game Planeshift, which is based on the open source 3d SDK Crystal Space.

The game will soon be downloadable from <http://www.reflex.lth.se/culture/disabilities> (or <http://www.reflex.lth.se/culture/annelov>)



The presentation will take place in the Reality Lab, Ingvar Kamprad's Design Centrum, at 15:15 on the 15th of June, 2005. All welcome.

That's all for this month – see you again in a month. /Roy Davies.



The Flexible Reality Centre Newsletter for May 2005.

Welcome

Well, spring is finally here, the birds are twittervated (as Disney likes to puts it) – even the crows, and it is proposal writing time for many of our members. I wish them luck (both the birds and the proposal writers). Furthermore, there is a general panic that summer holidays are fast approaching and so much must be done before then. With that in mind, here are a few notes on the latest happenings at the centre.

Invitation to an Ambient Technology Workshop

A new cooperation network is being proposed at Lund University to perform research and development into Ambient Technology. There are clear areas of overlap between this new network and RE-FLEX; in the early idea phase, design and simulation of proposed technologies before they are actually built, and even inclusion of VR and related technologies into ambient devices.

Ambient Technology is a term used to describe a non-intrusive ICT-based technology that supports the social well-being of people in their ambience, consisting of a number of interacting and communicating devices. As such it may display intelligent and complex behaviour. Typical examples at the moment are the intelligent carpet that extends the television into the living room, ant swarms for reconnaissance in danger areas and a number of innovative displays such as the Weather Forecast Beacon – weather at a glance:



The Beacon silently and elegantly communicates weather data using color and light. It glows more red when warmer weather is forecasted, and colder blue hues if cooler temperatures are on the way. The Beacon will also subtly pulse to show the chance of rain or snow. – from the ambient devices website <http://www.ambientdevices.com>.

The goal is to provide a platform to communicate and co-ordinate the numerous and varied expertise areas and resources in the university, turning LU/ LTH into one of the leading Ambient Technology centres in Europe. Ambient Technology is one of the main themes in the EU 6th Framework and will continue to be so in the 7th Framework. LU/LTH ought to play a visible role on this scene.

To start this process, we will run a workshop to make the map of LU/LTH. People will be invited who are interested in humanoid social behaviour, human machine interaction, robot technology, microelectronic design, computer science, and numerous application areas. For some inspiration, look at scenarios like www.it.lth.se/projects/vss/persson.

The workshop will be on the 8th of June at 13.00 hours (sharp) in the Industrial Design building. Please indicate your interest by emailing to Lambert Spaanenburg (lambert@it.lth.se).

TeknikCAD and Malmö1692 website

Our colleagues at TeknikCAD are progressing in leaps and bounds in the conversion of material from the town archives to 3D models of Malmö township as it looked in 1692. They have recently brought online their new websites (in Swedish, but with many good pictures) at www.teknikcad.se and www.malmo1692.nu. We look forward to new projects involving RE-FLEX where this material forms the bridge between the general public and their heritage.



New Opensource VR tool



Based on OpenSceneGraph, this tool allows design in 3DstudioMAX, exporting to the openscenegraph format, and editing of the design in a special graphical editor of both the VE and the interface around it. It is well worth a look and can be downloaded from <http://zyh.3dvrii.com>.

That's all for this month – see you again in a month. /Roy Davies.



The Flexible Reality Centre Newsletter for April 2005.

Welcome

This month's newsletter is a little late since I was waiting to write some words about the Executive Committee meeting on the 15th of April.

Executive Committee meeting.

The second executive committee meeting was spent discussing: the new Interactive Digital Centre; the new 'SOL' Virtual Reality labs and use of VR in cognition and language research; proposals in and out; cooperation projects with the local governing body, Regionskåne; postponing of the openday; SIGRAD conference; and new cooperation projects with NCC, InterIKEA systems AB, Kulturen and Fotovikens Museum. The minutes of the meeting will soon be available from www.reflex.lth.se/reflex/charter/minutes.

Openday moved !!!

It was decided that the Openday that was planned for the 11th of May should be moved to later in the year. We intend to instead combine it with the university Technology Openday in October. The exact date is as yet not set, but watch this space.

SIGRAD'05 conference in Lund November 23-24; graphics.cs.lth.se/sigrad05



The annual SIGRAD conference will this year be held at Lund University. This time the conference theme will be "Mobile graphics ", but contributions from other areas of computer graphics are as usual also welcome.

This is expanding to become a major event in computer graphics in the Nordic countries and beyond. Inspired by last year's success, this year we are arranging a two-day conference on the 23rd and 24th of November.



More information and call for papers can be found at the conference website: graphics.cs.lth.se/sigrad05.

C3D, an exhibition for people with an eye for the future, May 26-28; www.c3d2005.com



The education programme for Design Techniques at the Vocational Training School in Helsingborg will be showing exciting student projects in Virtual Reality and 3D graphics at the Concert House in Helsingborg.

This includes two projects in which RE-FLEX is involved; Visualisation of an old church through the years (The Queen's church in Lund), and visualisation of the building of the new 'City-Tunnel' in Malmö. I shall also be running workshops on the Friday about "The use of Virtual Reality in Design and Research". For more details, check: www.c3d2005.com.



That's all for this month – see you again in a month. /Roy Davies.



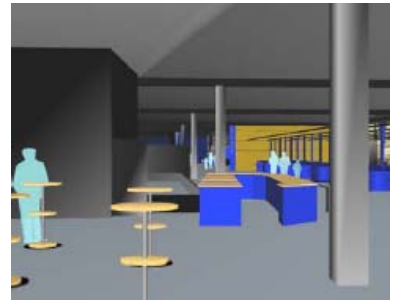
The Flexible Reality Centre Newsletter for March 2005.

Welcome

This month, several Master's projects have recently been presented or will soon be presented at the centre. Please see the websites for more details, especially the main partners in the projects, and to download the theses (when they become available).

A presentation tool for IKEA-stores using virtual reality based on open source (Nils Hellstrand) – www.reflex.lth.se/idc/projects/interikea

One objective in this masters project was to create an application for virtual reality that featured the entrance of an IKEA-store, another to establish (or at least try out) a method to design virtual environments representing IKEA stores. The method applied is to convert already existing CAD models of IKEA-stores using open source software to obtain the virtual environment; as a result much of this thesis concerns OpenSceneGraph, which is an open source software for virtual reality.



Visualization of urban space, methods for modelling and presentation (Anders Dahlbäck) – www.reflex.lth.se/design/urbanplanning

This work is connected to a project in Åkarp that Landskapsgruppen in Lund has designed. During my work I have modelled the project digitally and investigated how this technique can be used as a form of visualization of landscape architecture.

Connecting the VR-walker to an open source VR system (Nina Mojir and Daniel Bonnevier) – www.reflex.lth.se/vrwalker

This project is about development and evaluation of open source software (openscenegraph and vrpn) for the hardware VR-Walker. The purpose is to make possible movement in a 3-Dimensional world for VR-Walker users. VR-Walker is a prototype that has been made in the Reality Lab to give people a better illusion of space in a virtual environment by allowing a natural walking motion to drive the movement in the virtual environment. The user wears a Head Mounted Display and the harness as pictured on the right. **Presentation 16th March – 09:15 – 10:00 E-building, room E:2116, LTH, Lund.**



Training of Nurses using Virtual Environments with Haptics (Jesper Gill Hansson and Henrik Tuszynski) – www.reflex.lth.se/medical/nursetraining

The goal of this work has been to create a prototype of a product that will act as a training device for nurses learning how to take blood tests. What is unique is that this training environment uses haptic virtual reality (ReachIn) combined with a comprehensive multimedia tool to teach other aspects about the process. **Presentation 16th March – 10:15 – 11:00 E-building, room E:2116, LTH, Lund.**



That's all for this month – see you again in a month. /Roy Davies.

Contact: Coordinator – Dr. Roy C. Davies, roy.davies@design.lth.se, 046 2223342



The Flexible Reality Centre Newsletter for February 2005.

Welcome

Virtual Reality is coming of age. We see this in the proliferation of advanced VR programming tools at reasonable prices and the advancement of technology. One really exciting area which is really stretching the imagination is Cognitive Science, see below.

Exciting New Laboratories at the Centre for Languages and Literature (SOL)

One of the RE-FLEX members has recently been successful in obtaining funding to further develop their Humanities Laboratory at the Centre for Language and Literature. A small amount of the equipment will even be placed in the Realitylab at IKDC. Many of these new facilities will also be available to others after negotiation with the lab coordinators. Prof Sven Strömquist and Docent Kenneth Holmqvist are responsible for this exciting new combination of techniques, and say:

The Humanities Laboratory at the new SOL centre aims to be an internationally recognised research environment in language, communication and thinking. The lab will contain experiment studios, a physiology lab (ERP and body-movement measurements as well as articulographs), an eye-movement lab, Virtual Reality simulation, and acoustic lab, as well as a lab for the study of learning and development of test, diagnostic and support tools.

Virtual Reality and Augmented Reality have a great potential for research in language and cognition. We are planning to use the Virtual Reality lab, both at the Ingvar Kamprad Design Centre (Realitylab) and the Humanities Lab in two main ways:

1. *Visualisation of data that has been collected by other instruments in the Humanities Lab or at other places. In this, VR models can be used for, for example, visualising analyses from eye measurement, EEG/ERP and body tracking.*
2. *Stimulus presentation within various research projects; modelling, multimodal communication, spatial orientation, learning and human-computer interaction. We will be, for example, studying how gestures, glances and speech is used in communication with virtual conversation partners.*

Virtual Reality makes it possible to create experimental situations for studies of people's communication with each other and their environment. An important part of this is the study of gestures and gaze in human-computer interaction.

See also their website at <http://www.sol.lu.se>

RE-FLEX Openday and Workshop

A reminder about the openday and workshop on the **11th of May, 2005 between 10:00 and 15:00**. This will be open to all, and in particular RE-FLEX members and friends-of-the-lab. The purpose will be to highlight certain activities in the centre as well as be an open forum for discussion as to the centre's future direction. **Write it in your diaries now! And let me know if you are coming...**

The Interactive Digital Centre



Discussions with LTH Rector and other senior staff are resulting in a clearer picture of how this new centre will be organized – watch this space (or rather, watch www.reflex.lth.se/idc)

That's all for this month – see you again in a month. /Roy Davies.



The Flexible Reality Centre Newsletter for January 2005.

A New Year and a New Era for RE-FLEX

At the end of 2004, the executive committee for RE-FLEX met for the first time. This heralds a new era for the centre with the guiding principle – **Aiming for Growth, not Subsistence**. The minutes from this meeting can be found at <http://www.reflex.lth.se/reflex/charter/minutes/041215/>. Some details are included in this newsletter.

Executive Committee members are: Gunnar Bolmsjö (LTH, Mechanical Engineering), Eva Wigforss (LU, Medical Faculty), Birgitta Rydberg Mitchell (LTH; Architecture), Lars Harrie (LU, GIS Centre) and Nils-Gunnar Holmér (LU, Medical Faculty and Regionskåne). The coordinator for the centre is Roy Davies (LTH, Design Sciences).

Next committee meeting and AGM

- The next executive committee meeting will be on the **14th of April, 2005 between 08:15 and 10:00**. If you have items for the agenda, please send these to the coordinator by the 13th.
- The time after (in the Autumn term) will be in conjunction with the AGM which is open to all members. Date not yet set.

RE-FLEX Openday and Workshop

An openday and workshop is planned for the **11th of May, 2005 between 10:00 and 15:00**. This will be open to all, and in particular RE-FLEX members and friends-of-the-lab. The purpose will be to highlight certain activities in the centre as well as be an open forum for discussion as to the centre's future direction.

Write it in your diaries now! And let me know if you are coming...

Clarification of the structure of the Centre

RE-FLEX, the flexible reality centre is officially an LTH centre (see the charter) with members from LTH, LU, USiL and even outside the university.

- The centre is run by the coordinator in conjunction with the Executive committee.
- The centre has no resources of its own (neither physical nor personnel) - these are managed by its member departments.
- The centre uses various VR resources around the university – an agreement is required for each particular instance. Current facilities are:
 - The Reality Lab (coordinator Roy Davies) at Ingvar Kamprad Design Centre - agreement with Design Sciences Prefect of free use given that the centre supports the Reality lab by applying for finances for new technology resources is required each year.
 - The Full Scale Modelling and Mixed Reality Lab (coordinator Elisabeth Dalholm) at the Architecture Department - per project agreement required.
 - The Clinical Training and Teaching Centres at Lund University Hospital (coordinator Rose-Marie Klevsgård) - lab under development - will have a role in the application for equipment resources involving simulation and visualisation technologies.
- This means that the centre is not fixed to a particular place, though considers the Reality Lab as its main centre; Individual projects are expected to contribute to the running of the facilities they use.

Cooperation with EONReality to form an Interactive Digital Centre

The executive committee and key personnel will meet with EONReality to discuss the details of the formation of an Interactive Digital Centre. The practical upshot will be that members of the centre gain access to a wide contact network of VR companies, universities and other organisations as well as professional VR software.

That's all for this month – see you again in a month. /Roy Davies.





The Flexible Reality Centre Newsletter for December 2004.

**Merry Christmas
and a Happy New Year,
from RE-FLEX**



You know what to do... There is really a 3D picture in here.



That's all for this month – see you again in a month. /Roy Davies.



The Flexible Reality Centre Newsletter for November 2004.

Introduction

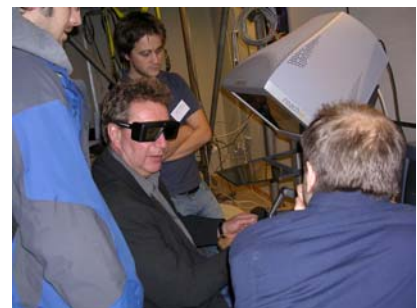
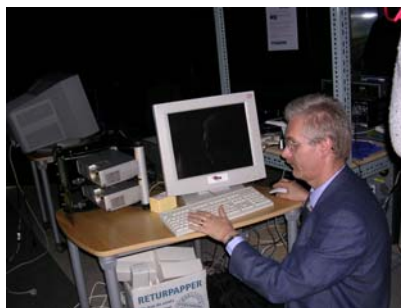
November was the month for VRForum2004 – after so much preparation and build up, it seems unbelievable that it is now over. Still, the centre's activities continue, in particular: the first official meeting of the executive committee; discussions for strategic collaboration with EONReality; various EU projects, and other proposals to be written.

Committee

The first meeting of the executive committee will occur on the 15th of December. Matters to be discussed are: running of the centre and the role of the executive; role and tasks of the coordinator; strategic collaboration with EONReality; financing.

VRForum2004 – Pictures

The conference was attended by a variable number of people during its one and half days. We had about 75 registered, with several extra students filling out the numbers from various courses. In all, a successful conference with interesting discussions. I shall soon update the website with pictures, for the moment, here are a few from the presentations, dinner and poster session:



Journal of Psychology

This is a scientific on-line journal. Each number is composed of a series of peer-reviewed articles on a specified target (which in the first issue will be 'usability in digital environments') and on other themes of interest, a review paper, various multimedia contributions. The authors are researchers, practitioners, operators, scholars from different academies, research institutes and companies around the world. The desire is to share competence and perspectives on the relationship between humans and technologies, giving visibility to innovative and creative work. For more details look at www.psychology.org.

Changes to the website

I am experimenting with a Content Management System called Mambo, which is opensource. Have a look at www.reflex.lth.se/mambo to see how far I have come...



That's all for this month – see you again in a month. /Roy Davies.



The Flexible Reality Centre Newsletter for October 2004.

Introduction

October was for me quite a quiet month, but November holds much excitement with VRForum2004, and many proposals to be written for mid December and early January.

Committee

LTH has given permission for the formation of the steering committee for RE-FLEX. The members are:

- **Prof Gunnar Bolmsjö**, Dept of Mechanical Engineering, Div of Robotics, LTH
- **Prof Eva Wigforss**, Medical Faculty, LU
- **Prof Nils-Gunnar Holmér**, Biomedical Engineering, LU; Region Skåne
- **Dr Birgitta Rydberg Mitchell**, Div of Building Function, Dept of Architecture, LTH
- **Dr Lars Harrie**, GIS Centre, LU

RE-FLEX coordinator:

- **Dr Roy Davies**, Design Sciences

The first meeting will be in December.

LUM

The Centre has received much attention in LUM this month – three articles, in fact. Have a look at <http://www3.lu.se/info/lumPDF/lum0904.pdf>. The centre has been written about in previous issues too as well as LTH nytt: http://www.lth.se/press_media/content/pdf/lthn03_4.pdf

VRForum2004 – Programme Highlights

Start - 15 Nov 12:30 with welcoming speeches

Keynote 1 - 13:15 - 14:00, 15 Nov

Anders Mattson, chairman in MoSiS – Game based development and model based leadership systems.

Session 1 - 14:30 - 16:30, 15 Nov

Cultural Awareness, Design, Architecture and Town Planning

Discussion 1 - 16:30 - 17:00, 15 Nov

Panel discussion on issues raised during the day.

Evening Event 19:00 - 20:30 (dinner) 20:30 – 22:00 (talk), 15 Nov

Conference Dinner along with an inspiring talk by Troed Troedson from paradigmmäklarna,

Skall vi förhålla oss till framtiden eller framhålla förr i tiden?

Keynote 2 - 08:30 - 09:45, 16 Nov

Michael Grønager, DTU and Nils Andersson, EON Reality

The relative benefits of commercial and opensource VR solutions - EON Reality vs OpenSceneGraph.

Session 2 - 10:00 - 12:00, 16 Nov

Medical Applications, Enabling Technology

Poster Presentations and Demonstrations - 13:00 - 14:30, 16 Nov

Session 3 - 15:00 - 16:30, 16 Nov

Supporting SMEs

Discussion 2 - 16:30 - 17:00, 16 Nov

Panel discussion on issues raised during the day.

End of Conference - 17:00 - 17:30, 16 Nov

Conclusion and details about the next conference

17th Nov – 09:00 – 12:00 EON Reality Introduction; 13:00 – 17:00 EON Reality programming

Changes to the website



Ongoing improvements are now mostly finished: Shortcuts from the main page; pages made wider (to 800 pixels); and starting to add alternative languages (see www.reflex.lth.se/vipodium for an example).

That's all for this month – see you again in a month. /Roy Davies.

Contact: Coordinator – Dr. Roy C. Davies, roy.davies@design.lth.se, 046 2223342



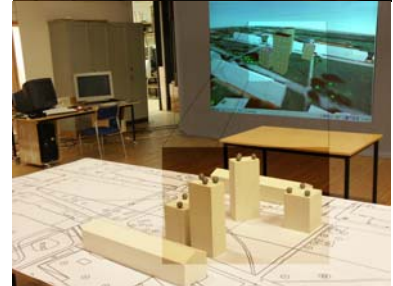
The Flexible Reality Centre Newsletter for September 2004.

Introduction

These are difficult times for the universities at the moment, with cutbacks and a general lack of research funding. Centers like RE-FLEX are therefore important where existing resources are utilized to best effect meaning that project costs can be kept to a minimum since the equipment and competence already exists. RE-FLEX is a resource center not only for the departments and research groups at the university, LTH and Lund University Hospital, but even the entire region.

VR in Architecture, Design and Town planning (www.reflex.lth.se/design)

One of the most quickly growing areas for using VR and associated technology is within architecture and design. In order to take advantage of and support this, several projects and initiatives involving both the new VIPodium (www.reflex.lth.se/vipodium) and the Full Scale Modelling and Mixed Reality Lab (www.reflex.lth.se/fullscale) are in progress.



VIPodium: Professor Jonas af Klercker with decades of experience of using 3D in architecture is leading an initiative to attract architect firms to the Reality Lab. He says: *"A picture says more than a thousand words" is an experience that most of us have already had, but how many words are required for a complete environment? A book perhaps or a film. The advantage with Virtual Reality and associated technology is that you can choose what and from where you want to see and experience. Furthermore, several people can take part in the same experience and immediately discuss and use the picture to give clarity and weight to their points of view.* See www.reflex.lth.se/vipodium for more details and pricing information.

Full Scale Modeling and Mixed Reality for Town Planning: An area of a town in Southern Sweden is being further developed. Part of the process is the gentrification of an existing area as well as the construction of completely new buildings. The result needs to be a harmonious suburb which suits the needs of those living in it. Furthermore, a large part of the area is parkland, so this park-like feeling needs to be maintained. In this project, Mixed Reality tools are being used as part of the design process allowing the decision makers, architects, end users etc to discuss the proposed plans, actively design and appreciate the final town-area before it is built. See www.reflex.lth.se/design/datw/townplan for more details.

Changes to the website

Ongoing improvements are being made to the website: Shortcuts from the main page; pages made wider (to 800 pixels); and starting to add alternative languages (see www.reflex.lth.se/vipodium for an example).



That's all for this month – see you again in a month. /Roy Davies.

Contact: Coordinator – Dr. Roy C. Davies, roy.davies@design.lth.se, 046 2223342



The Flexible Reality Centre Newsletter for August 2004.

Introduction

Exciting start to the annual VR course, proposals, and new students are signs of a new term, read on...

VR Applications course and Virtual Heritage

The annual VR applications course went off to a flying start thanks to our colleagues at the Interactive Institute, Tools Studio in Umeå (<http://www.tii.se/tools/>) who invited us to be part of the show in the Transformatorium. Over many days, they connected with several other VR labs around the world, places such as Barcelona, St Petersburg, Los Angeles, etc and provided a fully immersive virtual experience in a Collaborative Virtual



Heritage Cultural Environment for large groups of visitors, many of them children.

 **INTERACTIVE INSTITUTE**
TOOLS STUDIO UMEÅ

To quote from their brochure: *"Most young people of today are heavily involved in the information society through extensive use of Internet for gaming and communication. New tools are needed to match their nature of curiosity and support their creative development. The prototype presented will connect participating cities in different parts of the world and open up for a new and creative dialogue on how to further develop innovative environments for the generations ahead. To explore the use of Internet distributed virtual reality, the prototype offers a complex structure of both form and content."*



On our side, we used our single-screen active stereo system with navigation via a keyboard. The coolest thing was being able to talk and interact with other as well as experience the Virtual Environment – great fun.

This is in line with the current thinking in many Swedish cultural institutions, for example a meeting between The Swedish Roads Authority and The Swedish Cultural Heritage Board will take place to discuss similar issues, and we have projects with the local museum, Kulturen and Swedish Cultural Heritage Board (www.reflex.lth.se/culture) as well as involvement in an EU proposal along similar lines called ECHO (see below).

For more information on the Transformatorium and related activities, contact the Interactive Institute, Tools Studio Umeå, Robin Johansson, Project Manager, Liason Manager. E-mail: robin@tii.se

ECHO (Environments for Cultural Heritage of Orient)

We are in the depths of project proposal writing for an EU FP6 project. Participants are from Jordan, Poland, England, Turkey, Egypt, Tunisia and Sweden. Read more at www.technotower.com/Coordinated_fp6.htm#6. This is a very exciting project.

Building up the research base at the centre

A pre-proposal to the Swedish council for Strategic Research has been sent in. The proposal begins with *"A Strategic Research Centre called the Flexible Reality Research Centre at Lund University is proposed. Its purpose is to promote effective, innovative and usable visualization, simulation, virtual reality and associated technologies for the benefit of society"*. The applicants were myself and the members of the executive committee for RE-FLEX. If successful at this stage, a full proposal will be prepared for the end of the year.

VRForum 2004

Nag nag!! For those that haven't already done so, it is high time to register to attend and present at this foremost event. www.reflex.lth.se/vrforum2004. Do it now before you forget...



That's all for this month – see you again in a month. /Roy Davies.



The Flexible Reality Centre Newsletter for July 2004.

Introduction

Ah, lots of summer rain this year; makes the gardens grow and the farmers complain. At least it is now sunny – just as people are going back to work...

Plans for the next half-year.

A new term at the University, and many exciting activities and plans. However, since I am currently on half-time paternity leave, I will have to rely on others to help. The following list details the major activities (there are others too, but limited space on this page) – feel free to volunteer...

- **VRForum 2004**

All the final preparations for this conference are now needing to be made. Help appreciated.

- **VR Applications course**

This annual course will again soon start. I shall be canvassing for volunteers to give lectures on their Virtual Reality related activities.

- **VirtualSund**

It is time for a new VirtualSund meeting. Perhaps this could be in conjunction with VRForum 2004.

- **KulturIT**

A meeting of people interested in the use of IT in culture (such as museums and archaeology) is planned to be held in Skåne at the lab. Main organisers are the Swedish National Heritage Board.

- **VIPodium**

Some rebuilding and refining of the technology is needed (as well as some new funding).

- **MiROR**

The Mixed Reality Operating Rooms project is gearing up for the next proposal writing. Some frenzied activity will be called for at some stage. New partners have already been sought and added to the project.

- **VR in Architecture and Design**

Together with some of the major architecture companies in Skåne, we will offer our expertise and resources to furthering the knowledge of how VR can be used in decision making and contact with laypeople. We will also be able to earn some capital through this endeavour. Collaboration with EON Reality, Graphisoft and various VR technology companies also expected.

- **The Skåne region**

It is time to definitely place RE-FLEX in the work practices of the municipalities and other organisations around the region as a central resource. Some municipalities have already discovered the benefits of collaboration with us. With the help of Regionskåne, we now hope to broaden this to all the others. Funding proposal for mobile VR technology to be written and sent to Crafoordska Stiftelsen.

- **VR in Medicine**

Many exciting activities and potential collaborations are anticipated with the medical faculty and local hospitals, particularly in Lund and Malmö.

That's all for this month – see you again in a month. /Roy Davies.





The Flexible Reality Centre Newsletter for May 2004.

Introduction

What a busy month of May – lots of things to be done before June and some people start going on holiday, I guess. I would also like to announce that my working time will be reducing for a while since I shall be going on part-time paternity leave. I shall endeavor, however, to keep up these newsletters.

Master's student projects

Do you have ideas for new Master's student projects? Then now is the time to let me know so I can write these up on the website to attract the next term's students.

EON Reality, Graphisoft, temagruppen, infotiv, lasercad and RE-FLEX - collaboration ceremony



This ceremony (on the 2nd of June, 2004) marks the beginning of a mutual benefit collaboration around 2 software packages, EON Reality and ArchiCAD. The purpose being for members of RE-FLEX to be able to use this software in research and teaching, and for the companies involved to gain access to the resources and expertise in the centre.

Contact me if you want to know more about EON Reality or ArchiCAD and want to use these software packages in your research and teaching. Also, have a look at the website for more pictures and details (www.reflex.lth.se/reflex/News/EONGraphisoft).

EU – Enactive, Marie Curie and MiROR

The Enactive project (local contact charlotte.magnusson@design.lth.se) will have a project meeting on the 21st and 22nd of June. If you wish to know more, contact Charlotte, or have a look at the project website <http://www.enactivenetwork.org>.

I have also finished writing a new EU Marie Curie project that aims to bring researchers from other areas of the EU to Lund to help in and learn from the various projects at the centre. The latest is for PostDoc positions whereas the former was for PhD positions. If you want copies of the proposals, let me know.

The MiROR (Mixed Reality Operating Rooms) project is winding up again in preparation for a new proposal submission in early 2005. We are currently looking for companies for new partners.

Steering Committee

The RE-FLEX steering committee members are being determined from your suggestions by the LTH dean, as specified in the charter. We expect a result soon.

New Hardware

We have purchased some new hardware with the last of the funding from the Crafoord Foundation – a 3D Head Mounted Display with tracking system and PC. Very reasonably priced, so if you have any projects that require one – you are welcome to use it...



VR-FORUM 2004 – Supporting Regional Development

Reminder for pre-registration for this conference. We would like to know how much interest there is. You can download the pre-registration forms from the website (www.reflex.lth.se/vrforum2004) or I can send it to you. Do you have somewhere you can put out a bundle of pre-registration forms? Let me know and I shall send you some...



That's all for this month – see you again in a month. /Roy Davies.



The Flexible Reality Centre Newsletter for April 2004.

Introduction

April has been quite a quiet month, since it is time for the last big writing push before many proposal due dates in early May. However, I have included an interesting piece from one of our partners below showing that virtual reality need not just be shown on computer screens.

V.I.Podium

The V.I.Podium is now working! At the moment, the software is a little shakey, but we can at least take a complex model from 3DStudio Max and display it in the V.I.Podium on all three screens, with Active Stereo. Other software can also be used, though unless especially built for clustered PCs, only on one screen at a time. Much of the hardware was supplied by Helsingborg Municipality and came from the older CAVE system shared by them and Lund University. Now we have widened the field of view, and use clustered PCs.

See www.reflex.lth.se/realitylab for more details.



The Malmö Center for Medical Simulation.



As of this spring, Malmö Center for Medical Simulation, MCMS, at Malmö University Hospital, is offering advanced full scale simulator training courses for medical staff.

The simulator used is the world's most advanced full scale patient simulator, the Human Patient Simulator (HPS™) from METI Inc, USA. The HPS is a computer-model-driven, full-sized mannequin, which blinks, speaks and breathes, has a heartbeat and a pulse, and accurately mirrors human responses to such procedures as CPR, intravenous medication, intubation, ventilation, and catheterization.

The system is equipped with a "library" of different medical scenarios and with a number of patients, all with different physiological profiles. The training room at the simulation center is built to resemble an operation room or an ICU room. The doctors and nurses, from different specialities, examine, diagnose and treat the mannequin, just like they would do with a live patient. The fact that the "patient" actually speaks is mentioned as the factor that adds most to the realism of the scenarios.

The simulator can be used for different purposes. On a basic level, medical staff can learn and train their individual skills and also be exposed to medical incidents that occur very rarely, but when they do, need immediate attention. On a more advanced level, the simulator can be used for team training, comparable to crisis resource management training in aviation (CRM).

The MCMS, is the second simulation center in Sweden, and was established last fall. It is run by the department of anaesthesiology at Malmö University Hospital. **For further information please contact the center's coordinator Cecilia.Holm@skane.se.**

The picture shows a possible training situation. For realism, all trainees dress in green, ordinary medical equipment is used, and the patient is monitored just as in real life situations.

VR-FORUM 2004 – Supporting Regional Development

Reminder for pre-registration for this conference. We would like to know how much interest there is. You can download the pre-registration forms from the website (www.reflex.lth.se/vrforum2004) or I can send it to you. Do you have somewhere you can put out a bundle of pre-registration forms? Let me know and I shall send you some...



That's all for this month – see you again in a month. /Roy Davies.



The Flexible Reality Centre Newsletter for March 2004.

Introduction

Lots of exciting happenings in March to report on – Read on:

VR-FORUM 2004 – Supporting Regional Development . PRE-REGISTRATION

Please pre-register so we know how many people will be interested in this workshop / conference. You can download the pre-registration forms from the website (www.reflex.lth.se/vrforum2004) or you can ask me to send some paper versions to you.

Do you have somewhere you can put out a bundle of pre-registration forms? Let me know and I shall send you some...

Happy Elks



Master's student Sara Rowell, under the supervision of Håkan Efring, Joakim Eriksson and Jörgen Gustafsson, presented her thesis on detecting movement in peripheral vision using a traffic simulator.

Abstract: To enable studies regarding peripheral motion detection a traffic simulation software, Tsim, has been constructed. The virtual environment includes surroundings and a main country road on which the test person (driver)

will drive. As the driver has his/her concentration focused on a point somewhere in front of him/her in order to keep the car on track, wild animals will appear in the periphery and move towards the road. The time between the animal appearing and the driver slowing down to avoid it is logged. The virtual environment and the control are developed using 3D graphics techniques in Visual C++ studio with DirectX support.

You will soon be able to download the program TSim and the report from www.reflex.lth.se/rehab/perifery.

Simulator Centre at Malmö Hospital opened.

The simulator centre at Malmö Hospital was officially opened on the 1st of March. This is part of the current efforts in both Lund and Malmö to start new centres to bring together clinical teaching and training, and research, with a particular emphasis on simulator use (including Virtual Reality devices). On the 19th of April, KTC (Klinisk Tränings Centrum) at Lund University Hospital will have its opening day.



SOVRI – new ready-to-run version of OpenSceneGraph

Lots of new stuff on the website (www.reflex.lth.se/sovri) including links to free software and models. The latest version I have compiled for the OpenSceneGraph VR software is now downloadable as an automatically installing program for windows, see: www.reflex.lth.se/sovri/library/vr/OEUFReality/OSGVRPNInstall.



Online booking system for the RealityLab

The RealityLab has now been fitted with a new online booking system (www.reflex.lth.se/bookings). This is still under development, so all helpful suggestions are welcome. There is also now a terminal just inside the Reality Lab door where the current bookings can be checked and new ones made.



That's all for this month – see you again in a month. /Roy Davies.



The Flexible Reality Centre Newsletter for February 2004.

Introduction

Well, January and February are 'proposal-writing' time. I and many of my colleagues have been busy writing the Spring Collection of proposals – lets hope that at least some of these are successful.

New members Alnarp

I would like to welcome new members from Alnarp, Landscape Planning (<http://www.lpal.slu.se/>) who have a long tradition of 3D modelling and Animation and are interested in the potential usage of Virtual Reality. We look forward to a productive cooperation and exciting new projects.

EU project: VisSim-RegDev-PhD

I have sent in an EU proposal under the Marie Curie Human Resources and Mobility Programme called "Advancing Expertise in Computerised Visualisation and Simulation Tools to support Regional Development in New Member States through Doctoral Studies", or "VisSim-RegDev-PhD" for short. If you want a copy of the proposal, let me know. If successful, we could get a few new faces at the centre. The abstract reads: This research program for junior researchers aims to work with applications of simulation, visualisation, virtual reality and associated technology using methods of user-centred design in the area of regional development.

The purpose of this early stage research training project is to:

- Spread the knowledge that has been obtained both locally at RE-FLEX, the Flexible Reality Centre in Lund, Sweden, and through international projects;
- Make available the advanced equipment and resources at the centre to researchers that otherwise would not have access to these (particular emphasis is given to the new member states, especially the Baltic States);
- Bring together researchers from similar institutions around Europe so that a free sharing of knowledge can take place with the goal of strengthening those that are not so advanced in this area; and
- Identify and work with specific practical projects in the new member states, designed in conjunction with their home-institution and home-region, that will have a long term effect and with which the individual researchers can continue to work after their stay in Lund.

Cool free stuff

Opensource Flight Simulator programme: <http://www.flightgear.org/>. Opensource Car Racing Programme: <http://www.racer.nl>

SOVRI (www.reflex.lth.se/sovri)

The first meeting of the Scandinavian Opensource Virtual Reality Initiative (SOVRI) occurred this month. It was a very positive meeting which we will at least hope lead to closer cooperation between the various VR centres in Scandinavia and a free sharing of ideas, programs and Virtual Environments. The website will soon contain more details.

Clinical Research Centre – MAS (www.reflex.lth.se/design/CRC)

This project is progressing in leaps and bounds. The website says: The Medical Faculty at Lund University together with Region Skåne are in the process of constructing a new research centre CRC (Clinical Research Centre) at Malmö University Hospital. This involves the renovation of two existing buildings (b ~1930) and the construction of 3 new buildings. The buildings are then linked together by a covered indoor street and square.

The Flexible Reality Centre, using its facilities and expertise, is aiding in the visualisation and simulation of the project. This is seen as a first step within a larger collaboration with RE-FLEX regarding the project.



That's all for this month – see you again in a month. /Roy Davies.



The Flexible Reality Centre Newsletter for January 2004.

Introduction

Terribly sorry that I didn't manage to get a newsletter out for December 2003, but there were serious problems with our mailserver over the Christmas period – so I have waited for January. I hope you haven't been too disappointed.

ENACTIVE

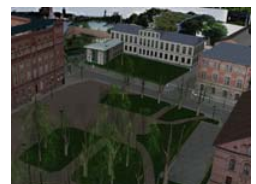
The ENACTIVE network started in January 2004 and will run for four years. Charlotte Magnusson (Certec) and Joakim Eriksson (EAT) are the main two people at the Department of Design Sciences working with ENACTIVE.

ENACTIVE is a *European Network of Excellence* that integrates European Researchers for the development, spreading and standardization of innovative interfaces and interaction paradigms, based on the new paradigm of Enactive knowledge, which proposes a closed genuine link between actions and perceptions. Enactive knowledge is not simply a multisensory mediated form of knowledge. It can be described as knowledge stored in the form of sensory-motor responses and acquired by the act of "doing". It is a form of cognition inherently tied to actions, capable of conveying a non-symbolic form of interaction.

Kulturen



A new project with Kulturen is starting with two Master's students. We shall be helping to convey to the public information about the proposed changes to the courtyard area. This will build on the Lundagård model made for the VR-GIS project. This project is also the first collaboration between RE-FLEX and the informatics department. See www.reflex.lth.se/culture/kulturen.



Medical simulators, training nurses, and tracing bullets

Various medically related projects are underway (www.reflex.lth.se/medical):

- The first meeting of the South Sweden Medical Simulator Interest Group (SS-Medsim) took place at Malmö hospital (MAS). We were treated to a demonstration of their new patient simulator, "Simon".
- A new project to use the ReachIn Haptic device is now looking for a suitable Master's student. We would like to develop a simple application for training nurses in inserting needles into veins – allowing training on virtual patients before coming to real ones.
- A project is also now underway at the department for Forensic Medicine called a "3D tool for reconstruction and visualization of injuries with avatars". See the website for more details.

Donation / Sponsorship Modules

We are trying a new concept – donation / sponsorship modules. Each of these is designed to encapsulate a need that the centre has and to make it clear how potential sponsors can help. See the website and let me know what you think (www.reflex.lth.se/reflex/sponsorship).

VR-Forum 2004

The website for VR Forum 2004 has been updated (www.reflex.lth.se/vrforum2004). The conference date has been fixed at the 15th to the 17th of November.

LTH-news and LUM

RE-FLEX was in the December issues of LUM and LTH News – hope you saw the articles. Links can be found on our News page (www.reflex.lth.se/reflex/News).

Mark-II



We now have a stage! All we have to do now is to paint it black and get all the projectors and computers working together properly. See www.reflex.lth.se/technology/markii.

That's all for this month – see you again in a month. /Roy Davies.



The Flexible Reality Centre Newsletter for November 2003.

Introduction

November was a month of great activity, with many visitors to the Reality Lab, project development and various events. Read below to see what has been happening and what to expect for December:

Website

The RE-FLEX website is as active as ever – keep checking to see the latest activities, newest projects etc. The latest development of the website ensures that the newest, most active projects are always listed first. In this manner, visitors to the site will easily be able to keep a check on what is happening.

3D/4D/VR GIS research and development programme meeting

On the **17th of December, 13.00-16.00**, there will be a workshop involving people from around the region to discuss how we should go further with the work that Ludvig Lungqvist has begun, combining VR and GIS as well as the development of 3D/4D GIS. (see www.reflex.lth.se/gis/3Dgis). **If you are interested in attending, please let me know.**

Virtual Design house

Peter Grunder and Farnaz Mir Hashemi will be presenting their experiences from an architect's point of view on the **15th of December between 13.00 and 15.00** in the Reality Lab, about modelling the Ingvar Kamprad Design Centre using ArchiCAD, 3D Studio MAX and Virtual Reality (OpenSceneGraph). See www.reflex.lth.se/designhus/designhus.



Traffic Simulation

Staffan Stårnevall will present "Traffic Simulation in Virtual Reality with Possible Application to Rehabilitation" in the E-building on the **afternoon of the 10th of December** (See www.reflex.lth.se/carsimulator/traffic). If you are interested, let me know and I shall tell you when we know the exact time.



VR Course

The VR course students will be presenting their projects on **Wednesday the 9th of December, between 18.15 and 21.00**. This project represents a substantial part of the course work and is intended to give the students a chance to go deeper into some aspect of VR, either practically or theoretically. You are welcome to come and see what they have been up to.

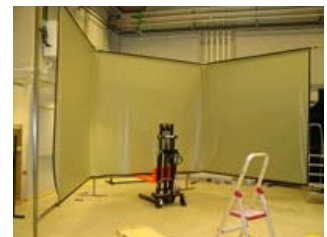


LTH-news

The latest LTH-news will hopefully contain an article about the flexible reality centre.

Hardware

Gerd Johansson has been awarded some funding for the Reality Lab for the further development of the Immersadesk. We will have to decide whether to rebuild using active or passive stereo system. The funding will also help towards the purchase of some general purpose VR software for the lab.



The MarkII is coming along (see picture to the right) – (www.reflex.lth.se/technology/markii)

RE-FLEX management committee

Still under discussion.

That's all for this month – see you again in a month. /Roy Davies.





The Flexible Reality Centre Newsletter for October 2003.

Introduction

Hi all. This month, as always, there are many things to report – read on:

VR-GIS

On the 21st of November, 16.00 to 18.00 in the Reality Lab, Ludvig Ljungqvist will present his work on the design of methodology for building a VR model of Lundagård using data gleaned from various GIS databases. This is a first step in a larger project to investigate the implications of coupling VR and GIS and is a collaboration between the GIS centre and RE-FLEX. All are welcome. There will also be a second presentation and workshop, date to be announced later. See the website (<http://www.reflex.lth.se/gis/3Dgis>) for more details.



VR-Forum 2003 and 2004

This year's VR-Forum is being held in Linköping 5th to 7th November, the theme is "Emergencies and Catastrophes". Next year, the forum will be held at the Reality Lab, the theme will be "Supporting Regional Development". More details can be found at <http://www.reflex.lth.se/vrforum2004>.

Hardware

The Helsingborg equipment has now been mostly tested and some bits are not working, such as the projector for the ImmersDesk, but most bits are fine, especially the projectors that were used in the actual CAVE. The next step in the MARKII project is the design and consideration of the new display system.

We have now installed the new computer with the large-screen, active-stereo, front-projection system and it works better than hoped. The computer is running an NVidia Quadro 3000 graphics card – very impressive and fast. Come and try it out.

We have had the large projector fixed, to a tune of approx 20000 SEK – it might have been even more expensive if it had been the actual tube, but luckily it was just some electronics...

Open-Source Virtual Reality

We are currently testing a software called OpenSceneGraph (www.openscenegraph.org) which is an Open-Source graphics engine that can be used for Virtual Reality. To this we would like to add the open source Virtual Reality Peripheral Network software (www.vrpn.org) or Gadgeteer (from VRJuggler) and the open dynamics engine (opende.sourceforge.net). These can all be tied together by VRJuggler (www.vrjuggler.org) to simplify the application development process.

Furthermore, there is a plugin to 3DStudioMax that can be downloaded (osgexp.vr-c.dk) which is developed by our colleagues at UNI-C making all this a very professional tool for Virtual Reality development. Further work is however needed to integrate these components and will be the subject of collaboration between UNI-C VR-C and RE-FLEX as well as others.

RE-FLEX Management committee

The management committee for the centre is being discussed. There will be five members with four chosen from LU, LTH or USiL and one who will represent outside interests. Candidates are being put forward. Further details can be found on www.reflex.lth.se/reflex/charter.



That's all for this month – see you again in a month. /Roy Davies.



The Flexible Reality Centre Newsletter for September 2003.

Introduction

On the 17th September, 2003, the flexible reality centre was officially recognised by LTH. Now we can celebrate with an opening ceremony – watch this space.

Charter and Executive

The charter for the formation of the centre is (or will soon be) available from the website. We shall soon also be calling for nominations for candidates for the flexible reality centre executive committee.

3 year plan and Sponsorship

I am currently working on obtaining sponsorship for the centre to support a three year plan for making the centre self-sufficient. Considerable work is required to set up a financial basis for the infrastructure. If you can recommend companies or organisations I should contact that might support the centre, let me know.

New equipment

We have now received the ReachIn multimodal display (see picture), but are still waiting for the computer. As soon as this arrives, we shall have a demonstration where you will all be invited to come and have a little feel. Thanks go to the Crafoordska Stiftelsen for this.



MARK-II

The Mark-II project (creation of a new display equipment from the old CAVE) is well underway – plans are being drawn – have a look at: www.reflex.lth.se/technology/markii/. If you have suggestions, please contact me.

PhD Thesis Defence

Jonas Lindemann at the department of Structural Mechanics will defend his PhD thesis on the 30th of October, 2003 at 10.15 in the V:B lecture theatre in V-huset. See the website for more details (www.byggmek.lth.se). The title of the thesis is "*Techniques for Distributed Access and Visualisation in Computational Mechanics*". All are welcome

Seminar (and PhD Thesis Defence)

Alan Costall (a well known cognitive psychologist) will be given a seminar on "James Gibson's 'ecological approach': beyond representationalism and realism?" on the 13th of October at 13.00, room 104, Kungahuset as an introduction to the PhD Thesis defense by David de Léon from the cognitive science dept. All are welcome.

VirtualSund

The second meeting of the VirtualSund group of organisations in the Öresund region working with VR will take place at VR-C at Uni-C in Lyngby, Denmark on the 8th of October. See the website (www.reflex.lth.se/virtualsund) for more details.

Maintenance

A small problem, soon fixed, hopefully, but our main projector for the Active Stereo display is feeling off-colour at the moment, a bit blue, if you like. The red CRT is not working, so the screen only shows in green and blue – lets hope this is not too expensive.

That's all for this month – see you again in a month. /Roy Davies.



The Friends of the Lab Newsletter for July 2003.

Introduction

It is quiet here in the Reality Lab, but a good chance to get a few things sorted out before the autumn term. However, just because Sweden is on holiday this month doesn't mean that nothing is happening. As you will see, several things are happening in various projects.

EU Projects

MiROR: We didn't get it ☹ (see previous newsletters). According to the evaluation, there were too few companies involved – it seems that hospitals weren't considered good enough on that count. However, the idea was judged as worthwhile, so the plan is to re-form, evaluate and submit again next year with changes made to satisfy the criticisms.

MET: This was also negative ☹ – the future of this project is uncertain at this stage.

Enactive: This project has, however, progressed to the next stage ☺ – this is a network of excellence, and negotiations are under way.

CAVE – Mark II

Some of you know the history of the Helsingborg CAVE – a brilliant piece of architecture that was, unfortunately a bit before its time. The CAVE is now several years old, but some of the components are still useful. We have now received the final go-ahead from Senior Development Officer for the dept of Trade and Industry, Hans Taranger at Helsingborg Municipality and Prefect Christer Sarnstrand at LTH to move the equipment to the Reality Lab and do what we can with it. The Mark-II project has the following themes:

1. Together with Master's students, the building up of the Mark-II from the CAVE equipment. *This will be aimed mainly at students from Helsingborg*, but with help from students from Lund in other areas of expertise. This will provide the students with a real, hands-on system development project to gain experience with. VR knowledge will be provided by members of the flexible reality centre as necessary.
2. *Researchers and Master's students together will develop and perform Master's application projects* with the aim of producing material for proposals. These will aim to establish application projects in which the Mark-II features prominently.

So, if you want to know more, let me know and I'll send over the project description. This will also be online at the new website soon. If you want to be involved, also please let me know.

Project RE-FLEX

As I have recently been awarded a 3 year part time PostDoc by LTH for building up the flexible reality centre, I shall begin by formulating a detailed project plan for the 3-year period. The chief goal will be that the centre, at the end of three years, will be a well oiled and funded research centre at LTH/LU with a good international reputation, that is a recognised competence centre for simulation and visualisation technology, and has a large academic and industrial contact network. We are already well on the way towards that goal.

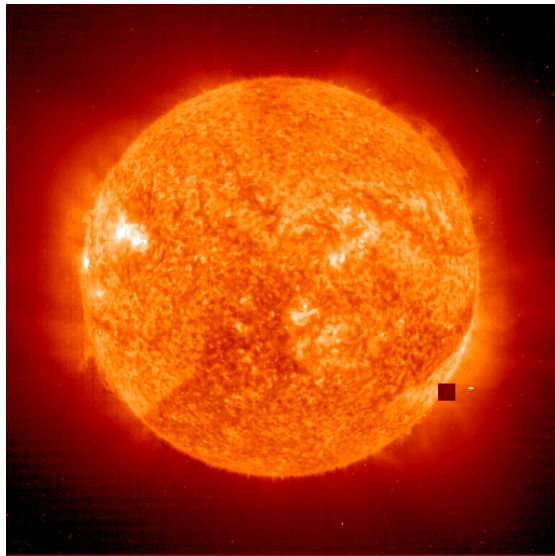
You can expect a website and project description shortly. One of the most important first steps is to finally get official recognition of the centre by LTH. We can then have an opening day...

Website and File server

Go to <http://130.235.212.74/reflex>. There you can see the new website taking form. Please give (constructive) criticism. In due course, the server will receive a proper domain name (www.reflex.lth.se) and the databases from the old server will be moved over (I just have to learn PERL and MySQL first...). Each research theme will also receive an information bay that comprises a place for files and a website. Have a look at <http://130.235.212.74/culture> as an example.

If you have announcements for next month's newsletter, let me know before the end of August.

/Roy C. Davies (roy.davies@design.lth.se), Coordinator for the Flexible Reality Centre



The Friends of the Lab Newsletter for June 2003.

Introduction

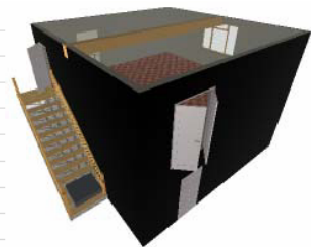
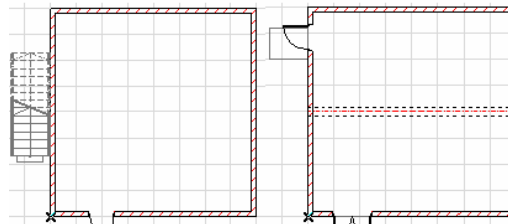
Ah, summer warmth, summer holidays, midsummer festivities, bathing in the sea, algal bloom, rotting seaweed – June, what a month. Some very interesting things to report...

Website and File server

The website is in need of updating, and there has been an expressed need for a fileserver to maintain copies of material from various projects as well as act as a communication centre, mailing list manager etc. To this end, I shall be taking some time in July to set up such a server as well as update the website. Comments and suggestions welcome

The MiROR Project

The EU Integrated Project MiROR – Mixed Reality Operating Room has cleared the first stage of the evaluations. Now a group of us has to go to Brussels to further clarify points from the proposal. If we are successful, the first MiROR will begin to be built in Lund in early 2004.



Crafoordska Stiftelsen

We have just received a positive reply from the Crafoordska Stiftelsen to fund the purchase of some new equipment to the Reality Lab. This includes a Haptic/Visual/Audio Display, a simple Head Mounted Display, and modification of a three-screen back projection system. These will be available to various projects, so if you have an interest, let us know.



Simcar (www.simcar.se)

The company, Simcar, owned by the brothers Ludde Andersson and Dan Andersson, will be moving their vehicle simulation platform to the Reality Lab. This marks the initiation of a possible cooperation to further the technology they have developed, improve its usability, and provide information on validation. We will be looking for Master's students for the Autumn term, so please spread this information.

Seminars and visits

Planned seminars for the Autumn – one on balance, and one on object scanning using a digital camera. Details to come later.

If you have announcements for next month's newsletter, let me know before the end of June.

/Roy C. Davies (roy.davies@design.lth.se), Coordinator for the Flexible Reality Centre

P.S. The picture above is of the sun taken by NASA with an ultraviolet telescope.

The Friends of the Lab Newsletter for May 2003.

Introduction

Well, the summer is almost here and the slight hysteria to get things done before everybody goes on holiday is setting in. This month I would like to report on the first meeting of the Virtual Öresund Network which was held at the Reality Lab on the 21st of May.

The Virtual Öresund Network

The purpose of the meeting was to bring together the many groups working with Virtual Reality and related technology from the region. The initiative was taken by RE-FLEX, VR-C and Öresund IT Academy to build this network.

There were approximately 30 participants representing many activity areas around the region. The meeting began with presentations from each of the participants about their work and interest in VR or related technology.

We then broke into three groups and brainstormed about how the network should progress. Some of the results of this are:

- Purpose of network
 - Increase cooperation
 - Create communication channels
 - Increase effectiveness
 - Generate ideas and thus new projects
 - Attain critical mass to allow application for larger projects
 - Generate capital (be a magnet for capital)
- Immediate Tasks (you will all receive notification of initiation and completion of these tasks):
 - Identify who and which organisations are missing
 - Mailing List
 - Find-IT Database
 - Webring
 - Website
 - Cataloguing of resources in the region
 - Identify possible sources of funding
 - Workshops and training programs
- Interesting ideas that need further discussion:
 - Free exchange of services (or perhaps a system of moneyless buying and selling of services).
 - Support for student, teacher and researcher exchange.
 - Need financial support for travel.
 - Free sharing of technology.
 - Be able to financially support pilot-projects.
 - The user as the main focus.
 - A common technical (opensource) platform

I have also put forward this though provoking goal:

- Within three years the Virtual Öresund Network will be a world-recognised example in positive cooperation supporting regional development across two countries.

The next meeting will be held at VR-C, UNI-C, Lyngby in the Autumn of 2003.

Seminars and visits

You have all received the message that tomorrow, the work on the Virtual Walker and the work on the virtual design exhibition room will be presented at the lab between 10 and 12 O'clock. All are welcome

If you have announcements for next month's newsletter, let me know before the end of May.

/Roy C. Davies (roy.davies@design.lth.se), Coordinator for the Flexible Reality Centre

The Friends of the Lab Newsletter for April 2003.

Introduction

The 25th of April was the day when I could start to think of other things again. On the 24th, several EU proposals in which the Reality Lab will be involved were due. These are submitted under Call1 of the 6th framework for IST – Information Society Technologies.

MiROR – Mixed Reality Operating Room

An integrated project (IP) involving 13 partners (local coordinator, Roy Davies)

The goal of MiROR, *Mixed Reality Operating Room*, is to provide a fully functional operating room that seamlessly combines advanced holographic, data processing, simulation and interfacing technology to produce a mixed reality environment where practitioners can safely practice performing complete minimally invasive and open surgical procedures. MiROR will resemble a real OR situation thanks to the integration of holography and advanced interaction techniques. The MiROR environment will allow individual and teamwork training, exposure to a wide range of tasks, crisis management, development of content and new curricula, performance evaluation and skill transfer. From an educational and psychological perspective, participants will have the freedom to fail and the possibility to learn by the systematic transfer of knowledge.

MET – Multimodal Environment Technologies

A Strategic Targeted Research Project (STREP) involving 10 partners (local coordinator, Roy Davies)

At the moment users, designer and managers can only get limited information from visualisation technology. Future technologies should be based on the real needs of people as individuals or as teams. Technologies are required to be user-friendly, intuitive, multi-modal, ambient and so on, in order to promote trust and confidence in them and increase competitiveness and strengthen social cohesion. The project Multimodal Environment Technologies (MET) leads to a set of multimodal interfaces for design. At the moment visualisation technologies are only visual and far away from intuitive use. The technical and research partners in this project are going to make a breakthrough in visualisation technology by integrating touch, sound and motion. The first year is focused on innovating the current touch, sound and motion recording techniques to be able to connect these to each other and to visualisation systems. In the second and third year integration of the systems will be developed. Finally, with experimental research a proof of concept will be tested with a diverse set of potential users based in workstation design, assembly layout and town planning.

ENACTIVE – Enactive Interfaces

A Network of Excellence (NoE) involving 24 partners (local coordinator, Charlotte Magnusson)

Objective of this Network of Excellence is to connect European researchers for the development, spreading and standardization of innovative interfaces and interaction paradigms that could substitute and integrate interaction with information mediated by symbolic/iconic systems (language/images) with media based on Enactive Knowledge. Enactive knowledge is not simply a multisensory mediated one, but knowledge stored in the form of motor responses and acquired by the act of "doing".

The Öresund VR network

Around the region, there are many research institutes working with Virtual Reality and related technology. The Öresund IT Academy (www.oresundit.org) has taken the initiative to bring together all these groups and will soon call a meeting which will be staged at the Reality Lab. The objective is to put together a network for the region with a goal of cooperation and sharing of common interests. The first meeting will occur in May.

Seminars and visits

Not much happening here, however, if you have seminars that you think may be of interest to the members of the Flexible Reality Centre, please let me know.

If you have announcements for next month's newsletter, let me know before the end of April.

/Roy C. Davies (roy.davies@design.lth.se), Coordinator for the Flexible Reality Centre

RE-FLEx *flexible reality centre* at the Ingvar Kamprad Design Centre

The Reality Lab

The Friends of the Lab Newsletter for March 2003.

Introduction

Hi all, welcome to the March FOL newsletter, written this time from the snowy north of Sweden (riksgränsen) where the weather is such that there is no point being outside...

Spring is sprung and the grass is ris – at least here in Lund. Lots of exciting things are happening at the centre this month, all the way from inside the lab to out in the EU. Read on...



In the lab; this month's project – triple head back projection display

For the last couple of weeks, Joakim Eriksson has been busy making new movable back-projection, high light-throughput screens. Three will be made altogether and connected to the same computer. In the back of the screens will sit DLP projectors. These screens will be able to be placed in any configuration, for example, to provide a display that covers the entire field-of-view for a single user. One area of usage will be with the car-simulator.



If you want to know more or have a project that could use this technology, contact Joakim (joakim.eriksson@design.lth.se).

In Lund; Reality Lab Centre Building

The document for building the centre is in the hands of the LTH rector awaiting a decision. I shall soon start on a new website and consider the redesign of the profile. If you know of any clever graphical designers who want a stab at designing a new profile for a highly visible centre, suggest to them to contact me.

In the Region; the Öresund VR network

Around the region, there are many research institutes working with Virtual Reality and related technology. The Öresund IT Academy (www.oresundit.org) has taken the initiative to bring together all these groups and will soon call a meeting which will be staged at the Reality Lab. The objective is to put together a network for the region with a goal of cooperation and sharing of common interests.

More news will be printed in this newsletter as it happens.

Internationally; EU proposals

In discussion with the EU office last month, it was considered too late to organise an information day for the current round of EU proposal calls. However, an information day can be arranged for before the next round.

Seminars and visits

Not much happening here, however, if you have seminars that you think may be of interest to the members of the Flexible Reality Centre, please let me know. We have been promised a seminar from the kind people at the Balance Laboratory; date to be decided.

If you have announcements for next month's newsletter, let me know before the end of March.

/Roy C. Davies (roy.davies@design.lth.se), *Coordinator for the Flexible Reality Centre*

The Friends of the Lab Newsletter for February 2003.

Introduction

Hello and welcome to a brand new year with the Flexible Reality Centre and the Reality Lab. Many events are planned for this year and new projects are already kicking off. To illustrate this, I will highlight a particular project each month – this month, we are looking at Lund, at least virtually (but first a few notices)...

Seminars, visits etc

The start of term has meant that we have not had the opportunity to meet for the monthly seminar in either January or February. However, we can hope that we shall soon be able to meet for a discussion on EU projects (see below), and the people at the Balance Laboratory have kindly offered to talk about their work, which is very pertinent to Virtual Reality experiences. More about these when the dates are fixed.

Reality Lab Centre Building

Should soon be finished...

EU proposals

Tomorrow I shall be meeting with the Lund EU office representative and will ask about organising an information seminar. Many of you will already be involved in EU proposals, perhaps to the first call of IST. At this seminar, we could also have short presentations (for those that wish to) of the projects that are currently being written – this might be a good way to find more partners or at least bring the group size to critical mass.

I am myself involved in the following:

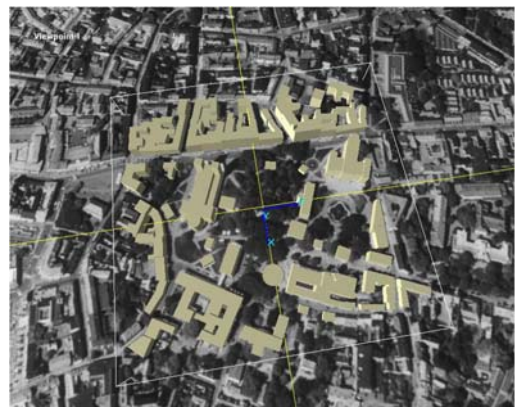
- MiROR – Mixed Reality Operating Room
- PRiMED – Participation using Multimodal technology for Ergonomics Design
- ENEDVRAT – European Network of Excellence for Disabilities, Virtual Reality and Associated Technology.

This month's project – a virtual reality model of Lund

Together with the GIS centre, we are investigating various methods of building 3D / VR models of townships from existing databases. Such databases may include details of roads, buildings, topography etc, and can be complemented by individual models of important buildings and façades.

At the right, you can see a first attempt where a simple model of Lundagård – which was constructed for investigating placement of mobile telephone towers – has been combined with an aerial photograph and imported into VR.

Models of towns can be useful for town-planners for visualising consequences of new designs, to investigate access to buildings, for tourists, for driving simulation etc.



However what is needed is a general method for being able to make 3D models of any town given available information. A master's student project will soon commence to further advance these ideas. If you wish to know more, please contact either Lars Harrie [lars.harrie@lantm.lth.se] or myself.

If you have any announcements for next month's newsletter, let me know before the end of February.

/Roy C. Davies (roy.davies@design.lth.se), Coordinator for the Flexible Reality Centre

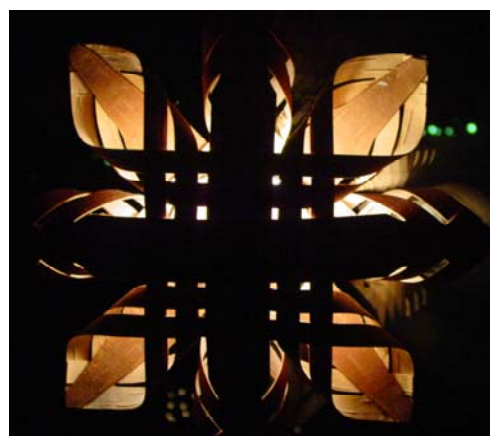
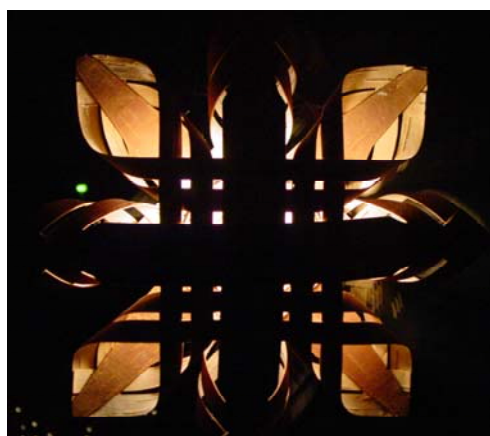
RE-FLEX *flexible reality centre*
at the Ingvar Kamrad Design Centre

The Reality Lab

The Friends of the Lab Newsletter for December, 2002.

Seeing Double

The pictures below form a stereo pair. You need to cross your eyes to get the feeling of depth, but when you do, you should see a stereo image between the other two. The dots at the top are to help you line up the images. I took this with just a digital camera.



Merry Christmas and a Happy New Year

Merry Christmas and a Happy New Year

See you all in the new year.

If you have any announcements for next month's newsletter, let me know before the end of November.

/Roy C. Davies (roy.davies@design.lth.se), Coordinator for the Flexible Reality Centre

RE-FLEX *flexible reality centre* at the Ingvar Kamprad Design Centre

The Reality Lab

The Friends of the Lab Newsletter for November, 2002.

Introduction

Hi again, here comes the November Friends of the Lab newsletter. Exciting things are happening in the lab: We have finally put up the big projector – see picture sequence below (though the picture with 4 people holding the projector up and two frantically trying to insert the bolts is missing since I was involved in the process ☺); the project ‘Empathy Systems’ is beginning well and we hope to soon see a device which will allow people to walk naturally in VR; and we have borrowed a large back-projection screen from Soundscapes which gives a picture two meters high by three wide, if you have the right projector.



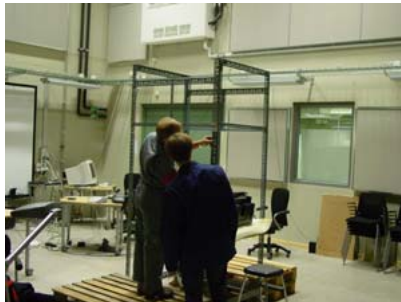
This is the frame that Joakim made.



This is the projector to go on the frame – its heavy and expensive...



Put them together, turning it upside down on the way...



Hmm, let's see now...



Heave ho...



And there you go.

Seminars, visits etc

On the 5th of December, 15:15 – 17:00, Tony Brooks will be giving a seminar about his work. “*Soundscapes works with the exploration of artistic expression in sound and light. One product is the COIL, an original sculpture of lights and sounds that allows interaction with both people and nature. One important application area is to give people with physical disabilities the chance to be artistically creative. Similarly, Soundscapes has been involved in the European project entitled CARE HERE (Acronym for: Creating Aesthetic Resonant Environments for Handicapped, Elderly and Rehabilitation).*”.

RE-FLEX – flexible reality centre

The document for building the centre has now been circulated and suggestions made. These will be consolidated and sent to LTH for approval. Then we will be an official centre.

EU proposals

I haven't had any response to the following suggestions; either this is not of interest, or you haven't read this far ☺: We have a wide network and can easily reach critical mass if we work together to bring home some EU projects. In that vein, I would like to propose two things: 1) that we set up a database / website of critical information pertaining to the 6th framework, areas of expertise, etc, and that 2) we invite in our EU expert from the university to give us 1st hand information about the 6th framework. **Let me know of interest.** Check the following website: <http://www.lu.se/intsek/EU/eu.html>

If you have any announcements for next month's newsletter, let me know before the end of November.

/Roy C. Davies (roy.davies@design.lth.se), Coordinator for the Flexible Reality Centre

RE-FLEx flexible reality centre at the Ingvar Kamprad Design Centre

The Reality Lab

The Friends of the Lab Newsletter for October, 2002.

Introduction

Hi all, autumn is drawing in and the weather outside is starting to turn nasty, though with some sunshine still. This didn't seem to deter the people from the 'Teknikens dag' on Sunday the 6th of October – in the Reality Lab, we had a steady stream of visitors, as you can see below.



Seminars, visits etc

The seminar for October was cancelled due to plan changes. Possibilities for the November seminar are work being done by Joakim Eriksson in using VEs as a tool for operators in industry, or from Mats Johnsson about using VEs in production line visualisation.

From now on, the seminar will become a monthly meeting where we get a chance to discuss the centre's activities, and will be held regardless of whether there is actually a seminar or not. I suggest also that we continue with the first Thursday afternoon in the month between 15.00 and 16.00. So the following times are allocated: 7th Nov, and 5th of Dec.

Reality Lab Centre Building

The document for building the centre is receiving its final modifications and will soon be out for comments. Note that the centre has gone through yet another name change. We wanted to have something unique that people would understand, both from a Swedish and English point of view. The centre will be called Reflex – flexible reality centre. We feel that the name reflects the multiple aspect nature of the centre and the diverse disciplines involved.

VR Forum 2002 and 2003

Each year, at about this time, a VR Forum is held – this year in Umeå, and next year in Linköping. This year, the focus was on VR for medical applications and included presentation considering aspects such as transfer of training, software, hardware and applications. We aim to bring the VR forum to Lund for 2004. See the events page on the Reality Lab website for links...

EU proposals

Things are happening in the EU pertaining to the 6th framework – subject areas are being decided and proposal dates set. Here is an opportunity to obtain significant financial support in a diversity of areas. I was thinking that we, as a centre, should aim to bring home several EU projects. We have a wide network and can easily reach critical mass if we work together. In that vein, I would like to propose two things: 1) that we set up a database / website of critical information pertaining to the 6th framework, areas of expertise, etc, and that 2) we invite in our EU expert from the university to give us 1st hand information about the 6th framework. **Let me know of interest.**

If you have any announcements for next month's newsletter, let me know before the end of October.

/Roy C. Davies (roy.davies@design.lth.se), Coordinator for the Flexible Reality Centre

Augmented and Virtual Reality Centre (AVRC) South Sweden

The Reality Lab

The Friends of the Lab Newsletter for September, 2002.

Introduction

We are recovering from the Design Centre Inauguration and Open Day. Thank you all who were involved in setting up displays in the Reality Lab – I think we had some of the most exciting stuff in the building. If you missed this social event of the decade, you can see pictures from the Reality Lab on our website – look under the Latest News heading.

You can see that things are really starting to happen here now. Next Wednesday evening, for example, I have the first in the Autumn lectures for the Virtual Reality Applications course.



Reality Lab



Development Hall

Seminars, visits etc

Due to summer and the open day etc, we have not had any seminars. We shall start again with a seminar on Thursday the 3rd of October at 15:15, in the Reality Lab – topic to be announced later.

Reality Lab Centre Building

I am finalising the details for the Reality Lab Centre formation – soon I shall be asking for comments. Note that this has meant a change of name. The centre is now called the ‘Augmented and Virtual Reality Centre’, to which you can add ‘South Sweden’ if you so wish. The reason for the change is that when I introduced myself as coordinator for the ‘Mixed and Augmented Reality Resource Centre’, people would say ‘what?’. As much as I regret using the term ‘Virtual Reality’, it is what people know, so I guess we are stuck with it. ‘AVRC’ runs off the tongue quite nicely as well. The Reality Lab is still called the Reality Lab.

Öresund VR Network

In the spirit of continued cooperation over the water, I attended an interesting lecture by a leading researcher in 3D computer graphics, Henrik Wann Jensen at the IT university of Copenhagen on the 29th of August. Such events are posted on our Events page.

New project to create a VR town model of Lund

There are several groups both inside and outside the university, who are interested in building up a model of Lund township. The plan is to build a small part of the central area over the next year, and then progress to a larger region. If you wish to know more, contact Lars Harrie at the GIS Centrum (lars.harrie@lantm.lth.se). You can also read the poster from the open day at the following link:

[http://www.eat.lth.se/realitylab/OpenDay/GIS Centre](http://www.eat.lth.se/realitylab/OpenDay/GIS%20Centre)

If you have any announcements for next month’s newsletter, let me know before the end of September.

/Roy C. Davies (roy.davies@design.lth.se)

Coordinator for the Augmented and Virtual Reality Centre

Mixed and Augmented Reality Resource Centre at the Ingvar Kamprad Design Centre

The LMARRC Friends of the Lab Newsletter for August, 2002.

Introduction

Hello everybody, and welcome back after the summer holidays. I hope you are all rested and ready for a new and exciting term. Many things have happened during the summer months at the Design House, and it looks good for the inauguration on the 4th of September.



We now have furniture in the lab, but unfortunately, the floor in the development hall was made with a slight slope, so this is currently being corrected

Seminars, visits etc

This month, there will be no seminar, since many of us are concentrating on the inauguration and following open house presentations. In October, we shall start again with seminars, topic will be decided later – anybody wish to talk about their work in VR?

Inauguration of the Design House

The design house will be officially inaugurated on the 4th of September. Following this, there is ‘open house’ where visitors will be able to wander around and see both the building and what is happening in it. In the Reality Lab, we will have several posters, hands-on demos and presentations. I have already contacted many people about taking part, and others have contacted me. If you wish to be part of this, and I seem to have missed you out, please let me know. Later today, I shall be sending out a list of participants.

Reality Lab Centre Building

Last month I wrote “We are still putting together the formalities for making the Centre official within the University. With the move to the new building, many such things have had to be put aside temporarily.”. We shall take this in hand now.

Website (www.eat.lth.se/realitylab)

I have been working improve the website. There are several new items, for example lists of events, courses and a Guestbook. Please let me know what you think...

Virtual Reality Applications course

This free-standing course starts again on the 11th of September. Last year, there were many exciting lectures by people all around the university working with VR in various ways. I look forward to a similarly exciting course this year. Again, if you feel you wish to give a lecture or make a presentation about your VR related work, let me know.

That’s all for this month. If you have any announcements for next month’s newsletter, let me know before the end of August.

/Roy C. Davies (roy.davies@design.lth.se)

Mixed and Augmented Reality Resource Centre at the Ingvar Kamrad Design Centre

The LMARRC Friends of the Lab Newsletter for June, 2002.

Introduction

We moved in last week !!! Just a few things missing, like railings on the stairs, chairs in the offices and furniture in the Reality Lab complex. It is like working in a building site, but at least the computer network is up and running. Most of the things from the old offices have reached the right places, but I'm still missing a pot-plant. Oh yes, no telephones yet, either...



Seminars, visits etc

This month, we shall have our seminar in the Reality Lab (1st (or basement) floor of the Design House), 15:00 on Thursday the 13th. It is, I'm afraid, unfurnished, and still being used by IKEA for making furniture, but at least we can look around. We shall then go on a little tour of the Design House, finishing on the 5th floor where we can have coffee and cake in reasonable comfort (there are furnishings there ☺)

The next two seminars will be planned as workshops for people who wish to present something at the Inauguration of the design house. There will be the opportunity to discuss with others what to present, how, etc (see below).

Inauguration of the Design House

Recall, that on the 4th of September, the design house will be officially opened. I would like anybody who has a project that is VR related and that they want to expose to as many people as possible to contact me. Each project will be able to have a stand in the Reality Lab where the visitors can come and learn about what is happening.

Reality Lab Centre Building

We are still putting together the formalities for making the Centre official within the University. With the move to the new building, many such things have had to be put aside temporarily.

Öresund VR Network

A couple of weeks ago, I attended a very interesting workshop at the IT university of Copenhagen about the potential for making Öresund networks. This looks very promising – putting together all the IT competence in the Öresund region results in a larger network than Stockholm. Several groups are starting to work together – we shall be part of an Öresund VR network.

Website (www.eat.lth.se/realitylab)

Nothing new here.

That's all for this month. If you have any announcements for next month's newsletter, let me know before the end of June.

/Roy C. Davies (roy.davies@design.lth.se)

Coordinator for the Lund Mixed and Augmented Reality Resource Centre

Mixed and Augmented Reality Resource Centre at the Ingvar Kamprad Design Centre

The LMARRC Friends of the Lab Newsletter for May, 2002.

Introduction

Welcome to our new 'Friends of the Lab'. Here comes the May Newsletter... One month left until we move into the Design-house and the Reality Lab, here is a picture taken a couple of weeks ago:



Seminars, visits etc

At the second **Reality Lab Seminar**, Joakim and Mattias presented (will present) their work in the project: "Using Virtual Reality as a tool for operators in process control". Next month, we shall meet on *Thursday June the 6th, 13th* 15.00 in the **Reality Lab** (yippee!). This time, we shall have a tour of the Lab Complex, and perhaps even the building. We'll still be in the process of moving, so things may be a bit untidy. Any suggestions for future seminar topics are welcome.

Inauguration of the Design House

On the 4th of September, the design house will be officially opened. We plan to have many exciting events in the Reality Lab. **There is the opportunity of having a VR project related display** so that visitors can have something to look at after the inauguration ceremony – if you would like to be part of this, please let me know.

The Reality Lab

We will be moving in the first week of June.

Website (www.eat.lth.se/realitylab)

I have added some bits and pieces to the website, particularly a Links page, (including free software) – if you have some to add, send them to me. I have also tried to make the website accessible for people using only text-browsers (eg with screen readers).

That's all for this month. If you have any announcements for next month's newsletter, let me know before the end of May.

/Roy C. Davies (roy.davies@design.lth.se)

Coordinator for the Lund Mixed and Augmented Reality Resource Centre

Mixed and Augmented Reality Resource Centre at the Ingvar Kamrad Design Centre

The LMARRC Friends of the Lab Newsletter for April, 2002.

Introduction

Welcome to our new 'Friends of the Lab'. Here comes the April Newsletter... Only a couple of months now until we move into the Design-house and the Reality Lab. Things are starting to get interesting.

Seminars, visits etc

At the first **Reality Lab Seminar**, I presented our work in the project: "Virtual Reality – a possible tool for Brain Injury Rehabilitation?", people could mingle and there were some interesting discussions. This will be a regular feature, and I welcome suggestions for future seminar topics. Next month, we shall meet on *Wednesday May the 8th*, 15.00 in the Change@Work room in M-house (I would like the first Thursday of each month, however, May is a little difficult with various holidays...). The topic is yet to be finalised – do **you** wish to present something about your work with VR ???

I am waiting to arrange a visit to the Reality Lab. Right now, however, it is being used for building material storage, so it is not so exciting.

Inauguration of Design House

On the 4th of September, the design house will be officially opened. We plan to have many exciting events in the Reality Lab.

The Reality Lab

There are no new pictures of the Reality Lab, however, discussions are under way for furnishings. Roughly speaking, the development hall will be divided into about eight workplaces and one conference area, with wide areas for moving about. The main hall will have mobile furniture that can be positioned as required; several computer tables, and many chairs, enough for a large audience, for example. Each lab will be divisible; the main hall into 9 areas with curtains and screens, the development hall with screens so people can work undisturbed.

Website (www.eat.lth.se/realitylab)

The databases for the website are now also online. Things you can find on the website are:

- **Friends of the Lab**
 - People who are interested in being notified about events related to the Reality Lab.
- **University Department and Company Listing**
 - University departments and Companies with projects and interest in VR, MR and AR.
- **Project Listing**
 - Projects currently in progress connected to the Reality Lab (not yet complete).
- **Master's project Ideas**
 - Ideas for Master's projects – constantly being updated.
- **Other exciting stuff**
 - Pictures, contacts, free VR books in pdf format etc.

Please feel to spread this address around, and in particular, spread information about the Master's project Idea listings.

Free Software

Recently, there has been a trend of major 3D modelling companies to release limited versions of their software for free. For example, one can obtain a modelling package from PTC and one from Alias Wavefront. Both well developed software. (www.ptc.com, www.aliaswavefront.com).

That's all for this month. If you have any announcements for next month's newsletter, let me know before the end of April.

/Roy C. Davies (roy.davies@design.lth.se)

Coordinator for the Lund Mixed and Augmented Reality Resource Centre

Mixed and Augmented Reality Resource Centre at the Ingvar Kamprad Design Centre

The LMARRC Friends of the Lab Newsletter for March, 2002.

Introduction

Welcome to the first *Friends of the Lab* Newsletter for the Lund Mixed and Augmented Reality Resource Centre. Every month, I shall send out such a Newsletter summarising the latest happenings, upcoming events and excitement. This month I am a little late, but you can expect a Newsletter, approximately at the start of each month. (If you would rather not receive these, or wish not to be a Friend of the Lab, please let me know).

Seminars, visits etc

I would like to announce **The Reality Lab Seminar Series** where once a month, somebody from one of our groups will give a half hour presentation of their work related to Virtual Reality, Mixed Reality or Augmented Reality followed by a half hour discussion and get-together. I shall start the ball rolling with a seminar on our work in "Virtual Reality – a possible tool for Brain Injury Rehabilitation?" in the beginning of April. *We shall meet in the Change@Work room in M-house, 4th of April, 15.00.* Please tell me before the 22nd of March if you are coming so I can arrange sufficient refreshments. When the Reality Lab is finished, the seminars will take place there.

I would also like to arrange some visits to the new Reality Lab. Dates will be announced soon.

The Reality Lab



Development Hall



Reality Hall

The Reality Lab in the Design Centre is coming along nicely. Have a look at the website, and you'll find some pictures from when we had a wander around a week or so ago.

Website (www.eat.lth.se/realitylab)

The website is now seriously up and running, and will hopefully become a natural focus for all who work with Virtual Reality, Mixed Reality and Augmented Reality in the Lund region. If you want to see the latest announcements, read the latest newsletter, see what projects are running, or what projects ideas are waiting for students, then this is the place to go.

Things you can find on the website:

- Friends of the Lab
- University Department Listing
- Project Listing
- Master's project Ideas
- Other exciting stuff

That's all for this month. If you have any announcements for next month's newsletter, let me know before the end of March.

/Roy C. Davies

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