UKCRC is an expert panel of the Institution of Engineering and Technology and the BCS for computing research in the UK. Its members are leading computing researchers from academia and industry.

About UKCRC

The UK Computing Research Committee aims to promote the vitality, quality and impact of Computing Research in the UK. Its members are internationally leading computer researchers drawn from both academia and industry.

The UKCRC was formed in November 2002 and is an Expert Panel of the British Computer Society, the Council of Professors and Heads of Computing and the Institution of Engineering & Technology.

By contributing to policy formation within these three key national bodies, UKCRC enables UK Computing Research to speak with a single voice.

UKCRC presents its views to Government, Parliamentary Committees and other agencies through pro-active submissions and responses to consultations.

Our Membership

UKCRC is composed of 110+ of the leading computing researchers from academia and industry. It is led by an executive committee consisting of 9 individuals elected from its ranks, plus a representative from each of the BCS, CPHC, and IET.

Reports and Submissions

UKCRC, since its creation, has been active in increasing the profile of computing research. It has achieved this in a number of ways; the most recent activity has primarily been through responses to Government consultations.

Recent examples include:

- "Computing at School: the state of the nation", a report of the Computing at School Working Group
- Submission to the House of Commons Science and Technology committee Inquiry – Bridging the "valley of death": improving the commercialisation of research
- Submission to the Cabinet Office Consultation on the definition and mandation of open standards for software interoperability, data and document formats in government IT
- Submission to the RCUK Consultation on Capital Investment

RIDERS
Research In Interactive Drama Environments, Role-Play and Story-telling

Themes

- RIDERS works around three themes:

- Reconciling the development of narrative structure (plot) with interactivity (user freedom)

- Supporting authors and developing new authoring approaches for interactivity

- Sharing and developing new evaluation approaches

Objectives

1. To form and support a multi-disciplinary community of researchers with expertise in the theory, technology development for and applications of interactive drama, role-play and story-telling.

2. To develop a deeper understanding of the ways in which narrative constructs can be effectively translated to interactive media such as virtual environments, augmented reality, interactive graphics, pervasive environments, games, performances or installations.

3. To develop a deeper understanding of the relationships between user, media and narratives.

4. To document and disseminate the current state of the art in technology–supported interactive drama, role-play and storytelling, both from the a UK and international perspective.

5. To generate methodologies for designing and evaluating technology–supported interactive drama, role-play and storytelling systems.

6. To reach out to the creative industries and create a bridge between research results and practitioner requirements

RIDERS supports research in academic and non-academic fields, including industrial and performative research.

It aims to be an internationally influential and essential resource for its members through events, a resource-rich website (see http://riders-project.net/), publications, international presence at key conferences, and creating and maintaining strong links with related networks.

RIDERS supports three main types of activity: 1) Events for network members which will bring together experts from each of the themes identified above, 2) Exchange visits which will enable researchers to discuss the different contexts and disciplines of interactive drama, role play and storytelling and visit relevant innovative labs/studios in academia or industry. 3) Support for PhD students to visit conferences to present work on topics related to RIDERS interests. In addition it will organise an IS summer school in its third year.

Events

Two network events in November 2011 and March 2012, with the third due Nov 7th 2012

Link with EU network GALA (serious games)

Initial Exchange visits

Paper at International Conference on Interactive Digitial story-telling 2011 and sponsored visit to Games company

Videoed visit to UCSC Games and Playable Media group Sept 2012

Joint sponsorship of workshop on Narrative at 3rd All-Hands Digital Economy Conference Oct 2012

A Live Role-Play event is planned for Aug 25-26th 2013

THz Research Network

Summary
The terahertz (THz) region of the electromagnetic spectrum (0.1 THz – 10 THz), with a bandwidth of approximately one hundred times that occupied by all current wireless and broadcast systems, has shown enormous potential for a broad range of applications from health care to security, with communications, high resolution imaging (e.g. in the medical and pharmaceutical sectors), spectroscopic materials analysis and atmospheric sensing of special importance. To date realisation of this potential has been severely constrained by the technology available for the generation and detection of THz signals. The most widely available commercial systems are based on broadband generation using Ti:sapphire (femtosecond) pulsed lasers and photoconductive detector technology (the modern day equivalent of the spark transmitter and coherer detector for radio frequencies), resulting in large, power hungry (kW) and relatively insensitive systems. However, developments in more compact photonics-based sources, stemming in part from EPSRC's support of research in this area, have led to the creation of more compact systems which are gaining markets- see, for example the products of Teraview, Picometrix, Toptica and Menlo Systems.

EPSRC has recently funded a Programme Grant, "Coherent TeraHertz Systems (COTS)" and the Steering Committee for this Programme have asked that the possibility of creating a Network to bring together researchers in this field be explored.

Role of Network
The role of such a Network might be:

1. To bring together THz researchers in the UK and increase their awareness of each other's work.

2. To facilitate collaboration, equipment sharing and measurement standardisation in an area where calibrated measurements are challenging.

3. To establish working groups with expertise spanning underlying physics to commercial applications to increase the impact of EPSRC funded research in this area.

4. To aid in the creation of technology roadmaps for THz technology, identifying particular research challenges that might be addressed by dedicated research projects.

Status
We have had several discussions with workers in this field and now intend to go forward with a consultation meeting to gauge whether there is sufficient support for such a network.

A key question is whether it would be better to form a new network or integrate this activity within existing networks.

Bits to Usage: an Outline for a Cross-ICT Programme Network

Summary
Modern society depends upon the generation, sensing, transmission, processing and display of rapidly increasing quantities of information, and increasingly is finding situations where such information then is used to instigate physical or other actions. There is strong evidence that future ICT systems will be increasingly autonomous, typified by the following changes:

(i) *scale*; a greatly increased amount of information being generated, processed and communicated over yet wider areas.
(ii) *dimensionality*; the information itself will no longer be 1D (as in digits) or 2D (as in frames), but 3D and indeed of higher dimensions (to allow sensory and other information to be managed).
(iii) *automatic response*; the systems will need to be inherently designed to act on processes and information in a secure, controlled and reliable manner.

In addressing such an opportunity a range of fundamental scientific, technological, social and ethical issues much be considered.

Traditionally, research has focused on discrete aspects of such systems, such as the design of a particular sensor or the development of a particular application, even though the devices, systems and applications are increasingly interdependent. In order to meet future challenges however, there is evidence that solutions will have to be found whereby new technologies are used together, with both information processing and data-management being more widely distributed (not least because data will be increasingly customer/individually-generated), and where the translation of signals from one form to another will require much more careful consideration.

Our objective is to bring together researchers spanning the range from device research to the social impact of applications, with the objective of investigating whether new and advantageous approaches are possible.

Role of Network
The approach to investigating these questions that we propose is:

1. Creating a steering group spanning the ICT programme.

2. Commissioning of targeted technical studies to address key strategic issues within ICT. Studies would normally involve investigators from two or more technical disciplines and would be carried out by supporting directly researchers in the appropriate disciplines working in small groups. The studies would typically be of shorter duration and more rapidly configured than standard research grants.

3. The establishment of working groups with expertise spanning device aspects to social impacts to develop position papers on particular issues.

4. The creation of technology roadmaps for ICT, identifying particular research challenges that might be addressed by dedicated research projects.

Status

Discussions with EPSRC have indicated that to progress such a proposal, they wish to see letters of support from existing ICT Network PIs indicating support for the approach proposed.

SPIRES   *Supporting People who Investigate Research Environments & Spaces*

SPIRES has three main areas of focus: the physical space, the technological space, and the social space of research environments.

1. The physical space focus examines which aspects of the physical environment best stimulate, support and sustain creative, collaborative and productive working
2. The technological space focus considers virtual and distributed research environments including the software and hardware that are used within and between research environments, and also that are used as research tools to examine those environments
3. The social space focuses on the inter- and intra-personal aspects of research environments as affective spaces, studying the motivations, feelings, personal and professional development of researchers; the relationships between colleagues, between faculty and students, students and supervisors; and the management of productive research environments.

SPIRES supports research in academic and non-academic fields, including industry, commercial and leisure research.

SPIRES aims to be an internationally influential and essential resource for its members through a variety of approaches including events, a resource-rich website, publications, international presence at key conferences, and creating and maintaining strong links with related networks.

Events: SPIRES has run three seminars, one on each thread (physical, technological and social). There is a conference and exhibition planned for early July 2013, with a workshop in February.

Website: The website includes academic resources (references, methodology, literature reviews); best practice (videos of workshop & seminar presentations and examples of research spaces-to be added shortly); information (CFP, events run by SPIRES and others, and funding opportunities).

Research: SPIRES is currently engaged in two research projects. Its first is building a database of research environments that can be interrogated to provide best practice information and recommendations in all three threads. Using the Grammar of Creative Workplaces (Williams 2012) SPIRES-funded members are conducting evaluations in London, Berlin, Tokyo, San Francisco, Scotland, Atlanta, New Jersey with more to come.

SPIRES second research project is identifying and creating patterns that support research in each of the three threads. SPIRES is working with subject experts in physical, technological and social research spaces, and with pattern experts to create the patterns.   This will be at the core of the SPIRES conference early July 2013 (date to be finalised).

Collaborations & links: Inspires (Jim Hensman, Coventry University) Immersive Visualisation and Collective Intelligence; OeRC (supporting the emergent network for research into multi-touch, multi-user table tops); SmartSpaces as a Utility (collaboration on DR12 workshop, and ongoing discussions re support for their thread within ITaaU); Sustainable Software Institute research data exchange on technological space from the SPIRES database.

Engineering and Computational Science for Oncology Network

Dr. Bogdan Matuszewski, University of Central Lancashire (Principal Investigator)

Prof. Christopher Moore, The Christie NHS Foundation Trust (Clinical Science Lead)

Prof. David Burton, Liverpool John Moores University (Instrumentation Lead)

Prof. Lik-Kwan Shark, University of Central Lancashire (Image Processing Lead)

The Engineering and Computational Science for Oncology Network (ECSON) (**www.uclan.ac.uk/ecson**) is a networking project, which started on 1st of October 2007. The project was funded by the EPSRC (EP/F013698/1) under its "Collaborating for Success Through People" programme with the EPSRC supporting it for 18 months. The network is co-ordinated by the Applied Digital Signal and Image Processing Research Centre (ADSIP) at the University of Central Lancashire (UCLan), with support from Developing Technologies Radiotherapy (DTRT) of North West Medical Physics at the Christie NHS Foundation Trust, and the General Engineering Research Institute (GERI) at the Liverpool John Moores University (LJMU). Initially the project started with 8 additional partners from 4 European countries, but over the course of the project so far ECSON has engaged with 24 institutions from 6 European countries.

Objective:

The general aim of the network is to create an effective research focus around radiation therapy with the network functioning as a UK and European hub to co-ordinate an effective, regulated flow of knowledge, people and data between, academic and clinical institutions, and liaise with interested equipment suppliers.

Activities:

- Seminars delivered at collaborating institutions by the core project partners and network members.
- Short one day workshops aimed at identifying exact areas of common interest and complementary scientific knowledge, involving exchange of ideas, helping to define precise objectives for the long-term collaboration and to lay down the foundation for the multilateral workshops.
- Longer term visits, investigative in nature, focused on cross-fertilization of ideas, performance evaluation and development of new applications leading to joint publications and collaborative project proposals.
- Multilateral project workshops to solidify the network and to identify clinical and scientific questions for the future.
- Special sessions organised at high profile conferences each focussing on a specific topic to provide forum for exchange of knowledge and to define new challenges, as well as to disseminate information about the network.
- Joint bilateral and multi-partner projects.

UK Photonics Outreach Network–unison

P.I - Dimitra Simeonidou

University of Bristol

Motivation :- Rooted in outcomes from ICT Theme Days/Workshops in 2009-2010 (Photonic Materials and Devices, Photonic Systems and ICT Next Decade Workshop) ...

- Fragmented community
- Lack of connectivity across research areas
- Not crossing boundaries between Photonics & other ICT disciplines
- Need for open communication (within the community and cross ICT), system integration and strategic funding

Response :- UK Photonics Outreach Network, with a vision to ..

..develop an enhanced systems based community culture and .. promote greater outreach and interlinking between research areas...

...ensuring photonics fulfils its potential across a range of areas

Objectives :-
- *Community*
    - *Develop a community culture within the Photonics community systems researchers*
    - *Build broader based, more integrated research community*
    - *Give the photonics community a voice to respond to new opportunities by developing an integrated research vision*
- *Outreach*
    - *Facilitate new dialogue across technical community boundaries opening new collaborative research opportunities*
    - *Provide better informed 'at source' research and technology activities via engagement with a range of end user communities*
- *Influencing:-*
    - *The EPSRC research portfolio in terms of balance and connectivity*
    - *The direction of national and international programs*
- *Exploitation*
    - *Involve and liaise with Knowledge Transfer Networks (KTNs) and others in order to establish new pathways to impact*
    - *Develop new channels for exploitation with emerging industry incorporating a systems level approach in order to develop commercial activities in higher value aspects*

Instruments:-
- *Workshop events (2 per year) – we have held 2 so far.....*
- *Technology awareness events (1 per year)*
- *Summer schools (in yrs 2 and 3)*
- *Technology road-mapping*
- *Web presence*

Next Generation Manufacturing Supply Chains and Digital Economy Research Collaboration
EP/F031858/1

Background

The next-generation supply chain is a network of all the entities in the extended supply chain, from product design and development to procurement and sourcing, supply and demand matching, logistics and distribution, sales force automation, and customer support. The increasing level of international trade between UK & India and UK & China often implies higher uncertainty and thus the need to identify underlying causes and strategies to protect against potential disruptions. The challenge for the future is to design and deploy e-supply chain solutions that fit the particularities and arrangements in place of a UK-India and UK-China trade partnership.

Objectives

The project had two important aspects namely creating a network and developing knowledge base for sharing and exchanging the expertise between UK and India. Specific objectives are given below:

- To share and disseminate new concepts, theories, methodologies, and tools within member organisations and the wider academic and industrial communities in the UK and India.
- To promote and enhance awareness of the UK research and development in next generation manufacture supply chains and digital economy.
- To explore areas of research that are of interest to academia and industry in both the UK and India and to support further collaboration.
- To increase the capability of the participating organisations and more generally the wider research communities of both the UK and India and foster greater understanding of supply chain trends and digital economy and improve research in this area.
- To help participating UK universities establish joint research programmes with partner universities in India and maintain international academic excellence in the proposed area.
- Identify potential enablers and barriers to next generation supply chains.
- To better understand the impact of digital economy as enabler for the implementation of "Next generation supply chains".

In order to achieve the objectives of the NEX-GEM project, a number of workshops were held in various locations in UK, India, Bangkok and China.

NEX-GEM Workshops Locations

Three major locations where NEX-GEM workshops took place included:

- A meeting of academics from UK and India was held at the Indian Institute of Management (IIM), Bangalore, India during 30 June – 02 July 2008. The workshop Included 21 participants from the industry and 18 from academia.
- Bangkok Workshop. Held on 06 July 2008 as part of the 13th International Symposium on Logistics, 2008.
- Workshop at the University of Hull, held on 27 May 2009. The workshop included the attendance of 36 delegates including 20 from industry.
- Istanbul Workshop. Held on 05 July 2009 as part of the 14th International Symposium on Logistics, 2009
- China is an important trading partner for UK plc and India. A workshop in Shanghai held in January 2010.

Remarks

NEX-GEM demonstrated to be a relevant forum where industrialists and academics were able to discuss current issues, challenges and future trends affecting the supply chains representing the industrial, commercial, and scientific relationships between the UK, India and China. The issues identified are key in the configuration of next generation manufacturing supply chains.

Semantic Media
a new paradigm for navigable content for the 21st Century

Title of Network: Semantic Media

Principal Investigator: Mark Sandler (Queen Mary, University of London)
Research Assistant: Sebastian Ewert <sebastian.ewert@eecs.qmul.ac.uk>

Problem Area: Content Navigation in Large Media Collections

Digital media content produced today within the UK's creative industries is exported to numerous countries in the world and hence forms an integral part of the nation's economic system. However, the profusion of digital content now available worldwide is over-whelming, potentially forcing consumers into increasingly narrow bands of media experience as they retreat to limiting choices as a coping strategy, which on the other hand gradually endangers this growing sector in the UK.

Project Goals:

The Semantic Media project focuses on investigating novel ways to empower users to find relevant content in large collections of media documents and exploring how industry and universities can work together in this field. Central ideas include:

Concept 1: Annotation during Production
- Employing knowledge of the production process leads to simplified and hence more robust (automatic) metadata generation procedures
- Integrating additional information usually discarded after production allows for richer and more detailed annotations
- Resulting novel workflow systems facilitate automation and thus allow content producers to focus on the creative process

Concept 2: Incorporating Global Knowledge Using Linked Data Technology
Managing and exposing enhanced metadata (concept 1) using linked data technology
- allows for uniting various sources of information and thus improving the user experience with richer interfaces
- encourages third party adoption and a more widespread dissemination in search engines
- enables the use of advanced knowledge processing and logical inference methods, which allow for more detailed query engines

Exploring a combination of such novel concepts demands a collaboration of specialists in semantic web technology, knowledge engineering, workflow development, machine learning, text mining, signal processing, computer vision, human interactivity and social computing.

Project Activities:
- *Organisation* of Workshops, Sandpits, and Networking Events for Universities and Industry
- *Funding* for Collaboration Opportunities and Pathfinder Mini-Projects
- *Documenting* the Research Landscape: Linked Data Technology for Media Databases and Archives, Multimedia and Broadcasting Ontologies

First Project Workshop:

Barbican Arts Centre, London, 2 October 2012. Invited Speakers: Karlheinz Brandenburg ("Inventor of MP3", Fraunhofer IDMT), David De Roure (Oxford e-Research Centre, University of Oxford), Yves Raimond and David Rogers (BBC R&D). **Join us via http://semanticmedia.org.uk**

Aims and Objectives:

The main aim of this network is the complete understanding of physical and virtual identities across time, space, and context. In this vein, we bring together a unique group of Network members representing academia, industry, and government stakeholders, and spanning disciplines including engineers, psychologists, computer scientists, criminologists, geographers, lawyers, medics and policy makers from a wide range of Institutions and government offices. A thorough understanding of identity at a biological and psychological level will enable a richer framework within which identity assurance can take place.

Activities of the Network

The following form a set of interlinked activities, planned to be carried out over the 3 year duration of the grant, and designed to promote collaboration, achieve the tangible objectives outlined and promote sustainability of the Network activities beyond the initial 3 year duration of the grant.

Workshops: Three Workshops will be held – the first within approximately four months after the start of the grant, another midway, and the third near the end. Each workshop will focus on one of the three major themes of the proposal: **biometrics measures of Identity**, **Identity Assurance** and the **Legal, Ethical and Policy issues of identity**. They will take the form of both formal presentations followed by breakout sessions to issues raised by the stakeholders. For the midway meeting, a 'sandpit' type workshop is planned, with an aim for participants to develop innovative, interesting and important questions and approaches addressing the future of identity.

Workshops will be held at different centres to enable laboratory/site visits to be held and the partners to see different work at these different centres. Industry exhibition will accompany all the Workshops. The Workshops will be used as the major route by which the work of the Network will be promoted to both business and academia, building upon the material on the website created for the Network.

Major Conference: There will be one major conference in the area of identity. This will be held mid-way over the 3 year period and will seek to attract submissions from wider scientific community working in the area of identity. The external participants from the UK and abroad will be charged a minimal registration fee and this money will be used to sustain the networking activities beyond the lifetime of the project. The conference programme committee will consist of members from other active EPSRC supported networks and will invite paper submissions from other networks.

Web site: A website giving the background to the Network and reporting on activities will be created. It will be the shop-front through which the Network and its activities will be promoted virtually. The website will also have blogs and tweets for members to exchange ideas in real time.

For further details and to join the network email: Dr Muttukrishnan Rajarajan
R.Muttukrishnan@city.ac.uk

EPSRC Refactoring and Testing Network (REFTEST)

Principal Investigator: Dr. Steve Counsell
Co-investigator: Prof. Robert Hierons

Project Summary:

The REFTEST Research Network is an EPSRC-funded project running from 2009-2012 which aims to explore and investigate mechanisms for simplifying and restructuring test and code artefacts through refactoring. The Principal Investigator of the project is Dr. Steve Counsell and Co-Investigator is Prof. Rob Hierons. Both are from the Department of Information Systems and Computing at Brunel University, Uxbridge, London. The Network includes industrial representations from major UK companies and Universities. These include: RBS, Oracle, Google, Quantel, BancTec, uSwitch, Caplin Ltd and Universities - Brunel, Limerick, Leicester, Bournemouth, Kent, UCD, Durham, Cagliari, Milan.

Application of refactoring principles to the testing process is only now emerging as an important software engineering discipline. Refactoring principles have been successfully applied to legacy object-oriented (OO) and procedural code. Nonetheless, there are still a multitude of 'open' research questions and challenges that need to be explored, especially with respect to its links with testing.

Aim:

The purpose of the Network is to investigate those links through three key research themes, each of which induces a set of research questions. The Network operates through regular meetings, workshops informed by a range of on-line resources and initiatives.

Objectives:

1. To bring together academics and industrialists interested in the refactoring and testing overlap.
2. To stimulate collaboration between individuals and groups in these fields in order to advance existing approaches and techniques.
3. To disseminate problems and results to researchers and practitioners in these two fields and to the wider Software Engineering community. The dissemination of this information will lead to a greater awareness and understanding of the relationships between refactoring and testing.

The three indicative research themes embraced by REFTEST are:

*   Refactoring test suites and laser-guided testing.
*   Formal and theoretical aspects of testing and refactoring.
*   Empirical aspects (metrics and evolution).

Framework for Responsible Research and Innovation in ICT

PI: Dr Marina Jirotka

Project Objectives

For the research community the project will create:

- a network of researchers with shared understanding of RRI in ICT
- a self sustaining ICT observatory that serves as a community portal and provides access to all outputs of the project
- a body of resources e.g. information, guidelines, methods, techniques, curriculum materials, lists of relevant expertise
- a set of recommendations and good practice

Beyond the research community the project will engage with:

- disciplines that use ICT as an enabling technology to foster a joint understanding of the implications of responsible decision making within the ICT domain
- key policymakers to influence the shaping of legislation and policy
- major ICT companies to explore the implications of the recommendations for their corporate statement for Business Ethics and Social Responsibility

Outline of Activities

- Adopt a holistic view of the challenges for responsible innovation posed by contemporary ICT research
- Create a network of researchers and practitioners concerned with responsible innovation in ICT
- Undertake a comprehensive baseline study of current issues, challenges and responses to them as perceived by ICT researchers
- Undertake a number of detailed case studies taken from across the ICT spectrum and chosen to reflect a range of issues and contexts
- Hold workshops to introduce the community to the challenges of RRI posed by ICT and some possible responses to them
- Create a Responsible Innovation Observatory to hold information gathered and disseminate best practice, promote recommendations and engage external communities (TORRI)

http://www.responsible-innovation.org.uk

http://torrii.responsible-innovation.org.uk

 PI: Professor Anthony O'Neill, Newcastle University

Aims

1. To maximise the impact of UK electronics research.

2. To consolidate the academic community engaged in all aspects of electronics research technology and design (initially: electronic materials, device concepts, miniaturization and diversification design paradigms, systems and networks).

3. To broaden the landscape in which eFutures can be effective

Objectives

1. To recognise and define the scope of electronics research and address future challenges engage university research with industry

2. To be a single voice for the UK electronics research community

3. To co-ordinate UK electronics research

4. To communicate UK electronics Research

5. To leverage future research funding

6. Engagement with other communities

Activities

1. 260 members so far

2. Web pages eFutures.ac.uk: members profile; news; events calendar; discussion forum

3. Community consultations and academic community meetings

4. Topic meetings (e.g. Nov11 meeting in Cambridge to discuss Guardian Angels FET EU flagship pilot]

5 Future planned meetings: Brains; ESCO report; XD research with funding; meet community (with NMI); beyond Moore's Law (supported by Royal Society)

eFuturesXD

£600k grant from EPSRC to stimulate cross-disciplinary research across the ICT portfolio

Rapid access (<1 month) to funds for: Scoping studies; Travel to other institutions; Arranging meetings between collaborators; Access to facilities

£60k limit (100% FEC) on applications as a platform to facilitate longer, larger grants