



## Eltek opens up free access to SSW labs

Leading chip technology supplier Eltek Semiconductors has signed a deal to give electronics companies free access to the SiliconSouthWest Labs.

Eltek is using funding from the Microelectronics iNet to support up to five companies with up to four days of free time in the labs at the Innovation Centre in Bath to develop and test semiconductor and electronic system designs. SSW partner Microlease is also offering exclusive rates on specialist equipment that companies need that may not be in the Lab. Eltek can help with

building samples and wafer processing of chip designs that can then be tested on a board and in a system in the lab.

The lab provides a wide range of test equipment from signal generators to oscilloscopes and protocol analysers as well as extensive network emulation capability. It also provides easy-to-use design software and prototyping systems from Altium.

The offer involves minimal paperwork and is open to any electronics company or startup in the SouthWest. [mike.jarvis@eltek-semi.com](mailto:mike.jarvis@eltek-semi.com)

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## Dialog drives home automation market with low power DECT

Dialog Semiconductor in Swindon is launching a family of chips and modules that are set to drive a whole new market in home automation.

The chip uses a standardised low power version of the well established DECT digital cordless phone standard. The key is that a DECT phone basestation can easily and cheaply be upgraded to be the controller for the home automation devices with simple Internet access.

The technology comes from the recent acquisition of SiTel and provides a range of chips and modules, mostly without the voice channels for low power applications such as window and door locks or wireless smoke detectors. The technology has already been trialled with elderly people to provide remote help in opening doors as well as calling for emergency assistance.

SmartPulse is the world's first family of IC based devices interoperable with the DECT ULE (ultra low energy) wireless standard for home automation, healthcare, security and energy monitoring consumer applications.

“At the moment we ship 120m chips into DECT phones and the bill of materials is just \$10,” said Jos van der Loop, co-founder of SiTel. “Through the DECT basestation you can add a modem module to connect to Internet and buy in ULE devices for the sensors without needing to know anything about DECT.”

All SmartPulse devices self configure to connect with the home hub and transmit 232 bit packet data in the 1870-1930MHz licensed DECT band. With a link budget of 123dB, systems that integrate SmartPulse sensors can reliably stream data throughout even large family homes and gardens. The SC14WSMDATA (data) and

SC14WSMDECT (data and audio) sensor nodes run for 10 years from a single AAA battery and integrate the baseband, radio transceiver, antenna and power amplifier into a single system-in-package IC. In sleep mode the programmable devices use less than 3uA.

The SC14CVMDECT base station device supports both voice and data, connecting with up to six voice and 256 data sensor nodes, and supports the DECT ULE, DECT 6.0 and CAT-iq standards. The system in package IC integrates a UART interface for external hosts, is easily programmable using its AT command set and requires no wireless network planning. [www.dialog-semiconductor.com](http://www.dialog-semiconductor.com)

**All together now!**

As the UK and Europe struggle to avoid recession, it can seem that there are limited opportunities for chips and electronics, both in funding and in sales. But the industry is used to the rise and fall of markets, and recovery will follow the downturn. So now is very much the time to be looking at those new ventures, and there are several activities focussed on the South West to help. From the Viva Entrepreneurs seminar on new types of funding on September 30th (p3), to free access to prototyping and test (p1), to a new 3D manufacturing lab (p2) to a seminar bringing together the supply chain (p2) for new chip startups and free design clinics (p12). In fact, there's never been a better time to take the plunge and set up a new venture in the South West.

You can also influence policy for the sector at a meeting of the Local Economic Partnership Microelectronics group after the Viva Entrepreneurs (p3) so please do come along.

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**On the web:**

For comment, analysis and the latest videos on what is happening across the electronics industry go to the new blog by SiliconSouthWest editor Nick Flaherty at [www.flaherty.co.uk](http://www.flaherty.co.uk)

# Digital manufacturing lab opens in Bath

A ground-breaking 3D printing lab has opened in the Bath Ventures Innovation Centre to make leading edge technology available to SouthWest companies. Using the RepRap technology developed at the University of Bath, the new Digital Manufacturing Lab provides easy access to 3D printing and prototyping for new product ideas, all in an environment supported by experts.

"This technology has strong potential benefits for local businesses, allowing them to manufacture items in-house at low cost," said Lab manager Pia Taubert. "Our new Digital Manufacturing Lab is located right in the centre of Bath, making it really easy for businesses from the region to pop in and try out the machine. Having RepRap here in

*"This technology has strong potential benefits for local businesses, allowing them to manufacture items in-house at low cost."*

Bath will allow very small companies access to very powerful technology. We hope that being able to use RepRap will increase awareness among local businesses of the potential of this type of machine."

RepRap is short for replicating rapid-prototyper; it employs a technique called 'additive fabrication'. The machine works a bit like a printer, but, rather than squirting ink onto paper, it puts down thin layers of molten plastic which solidify. These layers are built up to make useful 3D objects.

Dr Andrew Dent from the University of Bath's RepRap Project team, said: "As most of the parts of RepRap are made from plastic, the machine is able to print copies of itself. Therefore it can be replicated for free and shared between companies. This makes using RepRap so much cheaper than traditional industrial 3D printing."


Funded by the University's KTA account the Lab will also showcase RepRap technology to increase awareness of its potential benefits for businesses.  [www.digitalmanufacturinglab.com](http://www.digitalmanufacturinglab.com)

## Taking the leap... into fabless semiconductors

The Microelectronics iNet is hosting an event to make starting a semiconductor company easier than you think! The seminar at the Watershed in Bristol bringing together key parts of the supply chain to assist new startups and entrepreneurs with ideas to get started quickly and easily.

Confirmed exhibitors so far include...

- Eltek Semiconductors - Offering wafer processing and qualification builds with deferred payment terms to newstart-up companies.
- EDA Solutions - Offering design tools and access to foundry service partners.

- Global Unichip - System on Chip design foundry based in Taiwan.
- Microlease - Preferential rates on test equipment rental and contract hire.
- RoodMicrotec - Test services, test engineering, production test and programming, qualification and burn-in and failure analysis. Also offering deferred payment terms for new start-ups.
- SETsquared - The business accelerator for technology businesses.
- Lloyds Development Capital - investors behind successful electronics companies.  [www.siliconsouthwest.co.uk/index.php/2011/09/taking-the-leap-into-fabless-semiconductors](http://www.siliconsouthwest.co.uk/index.php/2011/09/taking-the-leap-into-fabless-semiconductors)

# Viva entrepreneurs

## The rise of the Adventure Capitalists

Thursday 29 September 2011 - Friday 30 September 2011

**Bath Ventures Innovation Centre**  
**Broad Quay, Bath, BA1 1UD**

7-10pm Thursday 29 September 2011

### **Silicon South West Dinner**

Aperitif, three course dinner, fine wine and company

9am-1pm Friday 30 September 2011

### **Silicon South West Seminar**

The Silicon South West network is supported by:



Silicon is the poster child technology of the high growth, capital intensive 'Californian' model and the South West has provided some of the UK's leading companies to have followed this path. However, it is not the only way and the 'necessity' caused by a dearth of early-stage venture capital and the pull of the global value chain have produced some very inventive start-ups.

#### **Delegate Fees:**

##### **Silicon South West Dinner:**

£55 (+VAT) per person

##### **Silicon South West Seminar:**

£20 (+VAT) per person

##### **Combined Dinner & Seminar:**

£70 (+VAT) per person

#### **Confirmed Speakers:**

- **Laurence John**, Chief Executive, **Amadeus and Angels Seed Fund (AASF)**
- **Darren Westlake**, co-founder, **Crowdcube**
- **Peter Claydon**, Entrepreneur, co-founder, **Picochip**
- Entrepreneurs Panel with: **Mark Barrett**, CEO, **Blu-Wireless Technology**

#### **Chair**

- **Nick Flaherty**, **Silicon South West**

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- Electronics design & development
- Smart grid/smart meter development
- Energy product design
- Innovation & Early Stage Investment

Book your place at: [www.siliconsouthwest.co.uk](http://www.siliconsouthwest.co.uk)

# SmartGrid mission heads to Germany...

The UKTI is leading a mission to Germany next week for UK companies to explore the opportunities for wireless monitoring, metering and software technologies with key participation from the South West.

Smartgrid devices are quickly being developed and the underlying legislation is in development, and the mission includes Prof Joe McGeehan of Toshiba's Communications Research Labs in Bristol, Simon Bond, Head of Bath Ventures, MicroWatt, EnModus, Hostmann Controls and Goodridge.

Simon Bond said: "Germany has a number of very interesting companies addressing the smart grid opportunity

and I'm looking for commercial and R&D partners."

As well as smart grid technology, a number of other potential growth markets are also being tested as part of the E-energy project, which are part of the programme: the German household appliance maker Miele is supplying hundreds of homes in the Ruhr region with intelligent washing machines that provide exact details about usage and can either be programmed or operated remotely to automatically turn on and do the washing at times when energy is cheapest during the day.

The visit flies out on Monday, 19th September to Berlin and includes:

- Framework conditions for Smart Metering and Smart Grids in Germany, E-energy – taking stock of last year, where will the development go
- Evening Networking Dinner with Dr. Tanja Schmedes, Project Leader eTelligence, Smart Energy Cuxhaven and other project partners
- Evening Dinner with Prof. Laskowski, Project Leader Rhein Ruhr Region and Herr Til Landwehrmann Kellendonk Elektronik GmbH
- Site visits Cuxhaven to model projects
- Model Region Rhein Ruhr: RWE Siemens, Miele, Stadtwerke Krefeld, Prosyst Software and key universities are part of a project to equip the city of Mülheim with a smart grid. 

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## ... as Bristol wins funding for Smart City project

Bristol has received funding from the EU for its work on Smart Cities, combining energy saving and ICT. Works starts on the two projects in the £300,000 Smart City Programme in the New Year.

The first project will develop a model to monitor energy usage within public buildings such as schools. The City Council will work in partnership with a

British systems manufacturer and over 30 partners across Europe, including IBM and CISCO.

The second project will support the further implementation of electric vehicles in Bristol through the development of web-based tools to highlight important information for electric vehicle users such as charging locations and links to public transport options.

"Smart cities will rely on high quality information streams which are used for everything from effective energy management to integrated transport systems. This data will also need to be presented to users in simple and engaging ways. This new funding will help Bristol develop the necessary systems and help it on its path to becoming one of Europe's leading smart cities," said Dr Chris Tuppen, author of the Smart City Bristol Study. His report recommends three key areas as a focus for Bristol's smart city work: smart grid and meters; smart transport; and smart data. 

*"This new funding will help Bristol develop the necessary systems and help it on its path to becoming one of Europe's leading smart cities."*

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## Plessey expands in China

Plessey Semiconductors is expanding into China from its bases in Plymouth and Swindon with the opening of a new office in the city centre of Shenzhen, China. Located in Futian, the heart of the Shenzhen Central Business District, the new office is the first milestone in an aggressive expansion plan for the company.

"A third of our sales are already into the Asia Pacific region," said Derek Rye, Plessey Semiconductors' Marketing Director. "Our innovative products and manufacturing expertise are in great

demand in China and this new office will enable us to properly support and grow this market. Our local presence in the Chinese high tech heartland also enables us to explore possible joint ventures with Chinese companies who want to tap into Plessey's long history of innovation."

The office opens with a full time staff of two — Eden Ho, Plessey Semiconductors' Regional Sales Manager for China, and Mark Chen, Technical Sales & Applications Manager, and the company plans

to increase the headcount rapidly. Plessey's operations are also supported by two Chinese distributors – Chieftech and AMOD.

"The Chinese market is continuing to experience considerable growth and Plessey is particularly well placed with its product portfolio to meet this demand – for example our range of sensors enables products to be smarter and more efficient," said Ho. "This new Chinese office will provide a dynamic, regional hub for our activities not only in China but also in Taiwan, Korea and Japan." 

[www.plesseysemiconductor.co.uk](http://www.plesseysemiconductor.co.uk)

# IPWireless launches full LTE product line in the US

IPWireless in Chippenham has launched its new end-to-end LTE product portfolio, aiming at federal government and public safety applications in a move towards a national network.

The company's portfolio includes highly scalable Evolved Packet Core (EPC) solutions, the EPC200 and EPC3000, the next evolution of its base station product, the V6 LTE eNodeB and end user devices for Band 14 and other global LTE spectrum bands, including the key 700MHz band that is earmarked for public safety in the US.

The EPC3000 is designed to support small-to-large local and regional networks, and scales as government agencies needs evolve to support large state-wide network deployments and ultimately, an interoperable national public safety network. The EPC200 is designed to support single cell deployments for military applications,

private compounds or disaster response. Both LTE core products are fully interoperable with other LTE networks using standardized 3GPP interfaces.

In addition to supporting IPWireless' V5 eNodeB, IPWireless' EPC products support the next evolution of IPWireless' eNodeB base station, the V6, which integrates a new digital and radio frequency card, supporting LTE Release 8 and is software upgradable to Release 9. The V6 LTE Base Station's compact and fully environmentally hardened form factor provides the ultimate in flexibility, allowing outdoor deployment at the tower top or building rooftop, at the base of a tower, or in an equipment room, shelter or outdoor cabinet. It is also ideally suited to rapid deployment disaster response networks and military tactical deployments.

"We are dedicated to helping government agencies maximize their spectrum assets especially during these challenging

economic times," said Bill Jones, CEO of IPWireless. "Our LTE solutions provide the performance, scalability and flexibility government agencies require so they can deploy mobile broadband networks more easily and with less operational overhead than is traditionally associated with network build outs."

The company also offers LTE modem devices, including PCI Express Mini cards and USB sticks that support band 14 (public safety and D-block) in 700 MHz as well as a wide range of commercial bands. These LTE modems can be supplied with other specialized public safety user devices, including devices that are backwards compatible to 3G commercial networks.

An IPWireless Band Class 14 LTE USB modem is currently being tested on the LTE emergency communications demonstration network in Boulder, Colorado. The demonstration network is being managed by the Public Safety Communications Research program established by the US Department of Commerce and is intended to provide a common demonstration site for manufacturers, carriers, and public safety agencies to test and evaluate advanced broadband communications equipment and software for emergency first responders. [www.ipwireless.com](http://www.ipwireless.com)

*"Our LTE solutions provide the performance, scalability and flexibility government agencies require so they can deploy mobile broadband networks more easily."*

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# SouthWest shines in space

Several South West companies are heavily involved in UK space electronics equipment development, as *Nick Flaherty* reports

Several electronics companies in the South West are involved in leading edge development for the UK's £7.5bn space industry. The UK Space Agency was established in March in Fleet, and the European Space Agency set up its first ever UK base at the Harwell Science and Innovation Campus (HSIC) in July, boosting the presence of space technology in the region.

While EADS and BAe Systems in Bristol and Astrium in Portsmouth are all key players, there are several other smaller players making significant contributions,

*“These new technologies are addressing really important issues to help us understand our climate and will help to predict how it will change over future decades.”*

from materials to system design to electronic system development. Systems Engineering and Assessment (SEA) in Frome is involved in several projects, from new instrumentation for predicting the weather to new ways to test electronic sub-systems as the satellites are being assembled.

SEA is part of a project led by Astrium to develop new satellite technologies for observing the Earth from space. The Centre for Earth Observation Instrumentation (CEOI), with funding from the UK Space Agency, has

awarded contracts to 8 industrial and academic teams around the UK., and SEA will be working with JCR Systems and RAL Space to develop instrument technologies to improve numerical weather forecasting by monitoring natural microwave emissions from precipitation, cloud ice and water vapour in the atmosphere, as well as sea surface parameters such as temperature, wind and sea ice. The measurements will improve the accuracy of the computer modelling carried out by meteorologists for weather forecasting, and is also important for oceanography and climate prediction.

“These new technologies are some of the most innovative and exciting to be developed under CEOI,” said CEOI Director, Professor Mick Johnson. “They are addressing really important issues to help us understand our climate and will help to predict how it will change over future decades.”

SEA is also looking at ways to provide power and data wirelessly across a plastic interface of about 1mm in

## Helping developing businesses manage their test equipment needs.



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thickness. For power transfer, this entails splitting a transformer core between primary and secondary windings, which takes transformer design in an unusual direction and requires careful design to cope with higher-than-usual-leakage magnetic field. This simplifies the assembly of satellites as equipment can be tested in when still in sterile bags.

Roke Manor Research in Hampshire is also closely involved in space projects. It is looking using its visual tracking system, developed for landing an unmanned aerial vehicle (UAV), to accurately determine the position and orientation of a target spacecraft in real time and enable automated rendezvous and docking using only a single camera.


The tracking accuracy has been measured by processing simulated imagery in a range of spaceflight scenarios and researchers are looking at how to use the technology, called Autol, in the space market.

Using a single camera gives mass, complexity and reliability advantages over tracking solutions based on light detection and ranging (LIDAR). This

technology is crucial for 'sample return' missions, and the lower cost works well for microsattellites.

Startup 3-Cs in Malvern is looking to use its high density superconducting technology to reduce the size and weight of the power systems in space.

The company has a pilot plant for its coated multilayer conductor cyclinders and is modelling the structures to demonstrate how they can be used for superconducting magnetic energy storage (SMES) that would provide the power to the electronics.

Meanwhile SSBV Space and Ground Systems in Portsmouth is working on a new kind of attitude sensor for satellites that can determine the direction of spacecraft travel in all orbital locations by measuring the pressure or density of the atoms and ions that a spacecraft moves through in low Earth orbit (LEO). The team has demonstrated the technical feasibility of the system and is now looking to the development of a prototype sensor, qualification testing and in-orbit demonstration to bring the sensor to market. 

## *Brislington, we have a solution*

Perhaps the most surprising location for a space systems company is Brislington in Bristol, but there SciSys is developing a plug and play approach to software for small, low cost 'CubeSat' satellites by following the design principles of a service-orientated architecture. This would have reusable software components in a development environment to construct a software system that is directly deployable on the on-board CubeSat computer.

Designers of Cubesats use standardised components but the on-board software is currently limited and this in turn restricts mission ambitions. This new approach offers a set of simple and reusable on-board software functions that can be easily configured and tested. Designing and implementing the mission software then becomes a process of selecting and configuring a set of standard services, extending them where necessary to perform specialised processing.

[www.scisys.co.uk](http://www.scisys.co.uk)

[www.3-cs.co.uk](http://www.3-cs.co.uk)

[www.roke.co.uk](http://www.roke.co.uk)

[www.sea.co.uk](http://www.sea.co.uk)

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# Bristol asserts its position as a multicore centre of excellence

Over 100 software engineers met in Bristol last week to discuss multicore programming. *Mike Bartley of TVS and Nick Flaherty report*

Chip manufacturers are now moving to multicore designs (i.e. multiple CPU cores on a single chip) to achieve the relentless drive for improved performance at lower power demanded by consumers. Doubling the processing power by adding an extra CPU (or 3, or 7) – what could be simpler?

Well, the problem is that the programmer now needs to write his program to run on multiple CPUs. That means working out what can be done in parallel and then how to synchronise those threads. That is hard – VERY hard.

The Multicore Challenge II attracted over 100 delegates to Bristol with talks from international companies such as ARM and ST-Ericsson, academics from Bristol University and local multicore start-ups such as XMOS and PicoChip.

One of the key themes to emerge was the importance of OpenCL as a programming language for multicore systems. ARM fellow and visiting professor at Plymouth University Ian Philips covered the challenges of the law of diminishing returns and highlighted the role of multicore in reducing power, and the advantages of OpenCL. This language allows code to be written for multicore systems without needing to know what resources are available to run on.

Simon McIntosh-Smith, head of the microelectronics research group at the University of Bristol took up the theme with the details of OpenCL and his experience of using the early stage tools. “Our top frustration at the start was the maturity of the tools, whether an error was a bug in the code or in the tool, but we have seen some huge leaps even in the last six months.

He points to senior figures in ARM who say that all ARM-powered mobile phones, the vast majority in the world, will be using OpenCL in the next few years.

ST-Ericsson advanced computing fellow Marco Cornero looked at the real world adoption of multicore architectures, pointing out that only this year is the industry now really starting to adopt the technology, particularly with massively-parallel graphics CPU (GPU) architectures such as Nvidia’s CUDA. Now systems are restricted by the very specific GPU architectures and there is a strong push for high level programming tools.

That was a point implicitly taken up by Matt Fyles of Bristol chip maker XMOS, who looked at the tools for programming and debugging the XMOS scalable multicore architecture using the XC language, while Gajinder Panesar, chief architect at Bath-based Picochip looked at

## Multicore III for September 3rd, 2012

The Multicore Challenge is an annual event that considers the challenges surrounding developing software products built on multicore hardware. Held physically in Bristol and webcast around the world, the meetings provide a chance to listen to the latest multicore technology. The third conference is set for September 3rd, 2012. More information from [mike@tandvsolns.co.uk](mailto:mike@tandvsolns.co.uk)

the tools and programming environment for the massively parallel picoArray.

At a lower level, Gordon Cameron, strategic alliances manager for Mentor Graphics looked further down on at the open APIs for communicating between cores, and David Lecomber, CTO and founder of Allinea Software in Warwick discussed the company’s distributed debugging to get multicore systems to work reliably.

TVS, a supplier of software testing and hardware verification solutions, organised the event and all the slides have been posted on their website. “We were very pleased to see so many people at this event,” said TVS CEO, Mike Bartley. “Our speakers gave a clear overview of the challenges and some potential solutions and the panel at the end was extremely lively. Our delegates have given us some fantastic feedback to allow us to put together an even better event next year as well as interesting web casts in the meantime.”

[www.linkedin.com/groups/Multicore-Challenge-4071328?gid=4071328&trk=hb\\_side\\_g](http://www.linkedin.com/groups/Multicore-Challenge-4071328?gid=4071328&trk=hb_side_g)

## Ocean Blue Software Partners with ACCESS on Connected TVs

Ocean Blue Software in Bristol has teamed up with German consumer equipment maker ACCESS to provide cutting edge middleware solutions supporting IP Connected Home and Connected TV.

ACCESS has extensive experience offering innovative and market leading products for the Connected TV and IP Connected Home, including its NetFront Living Connect market-leading Digital Living Network Alliance (DLNA)

Technology Component software and its NetFront Browser DTV Profile HbbTV Edition, which supports all major Internet-browsing standards for digital television.

The combination of Ocean Blue Software’s experience providing innovative middleware software solutions that allow digital TV device manufacturers to deliver outstanding multimedia experiences and ACCESS’ embedded expertise will provide a solution which brings together Connected TV and IP

Connected Home to offer new experiences to viewers. “It’s very exciting to be working with Ocean Blue to provide innovative TV services to consumers,” said Dr. Neale Foster, VP of Global Sales at ACCESS. “Connected TV is now ready to fulfill its potential and when integrated with Connected Home offers great possibilities for innovation and enhanced consumer experiences. This partnership will be instrumental in carrying out our vision of the connected future.”

[www.oceanbluesoftware.co.uk](http://www.oceanbluesoftware.co.uk)

The £23 billion per year UK electronics industry is at risk because of a 47 per cent decline in those entering the subject at degree level between 2002 and 2008, so the *UK Electronics Skills Foundation (UKESF)* started two summer schools in the South West to help reverse this trend...

## Industry joins together in skills drive in Bristol...

**B**ristol hosted 40 sixthform students over the summer in the first of a series of summer schools designed to overcome the shortfall in electronic engineering graduates.

“We need to attract more of the brightest students to study engineering at universities like Bristol and help prepare them for a vibrant and innovative electronics career,” said Professor Nick Lieven, Dean of Engineering at the University of

Bristol. “Seeing the students working together and the ideas they’ve come up with throughout the course really highlights how much young talent we have in the UK.”

The five-day course for 16 and 17 year-old school students was backed by Imagination Technologies and Dialog Semiconductor, as well as ARM and Cambridge Silicon Radio. It included a design and build challenge to create the best-performing two-wheeled balancing robot as well as innovation sessions,

brainstorming ideas for future products and lectures from the sponsors.

“The UKESF summer school targets 16 to 17 year old school students who have yet to make their degree choices,” said Dr Wendy Daniell, the UKESF manager. “The course highlights advanced electronics technologies; it gives an insight into studying the subject at university. It also illustrates the exciting career choice available in the UK and the strength of the industry.”

## ...and in Guildford

**U**KESF also provides industrial scholarships to the most talented students at university, aiming to have 160 new undergraduate scholarships each year, with 10 UKESF partner universities and 100 sponsor companies signed up by 2014.

Some of these were at the University of Surrey last week to meet and learn from industry bosses during a five-day course run by the UK Electronic Skills Foundation.

Scholars took part in professional development sessions to complement academic learning, meet with CEOs and senior executives from companies including ARM (Warren East), Imagination Technologies (Tony King-Smith) and C-MAC MicroTechnology (Indro Mukerjee).

“Electronic engineering is a key enabling technology for economic growth yet we’ve seen nearly a 50 per cent decline in students entering electronic engineering degrees in just a few years,” said Indro Mukerjee, chair of UKESF Strategic Advisory Board, chair of Semta’s electronics strategy group, and executive chairman, C-MAC MicroTechnology. “We’re working to reverse this decline, and to ensure graduates are better prepared for the exciting and rewarding careers in our industry.”

[www.semta.org](http://www.semta.org)



### Who we are?

The Microelectronics iNet is a £2.3 million European funded project aimed at supporting innovation in the South West. This consortium of Universities, networking organisations and commercial partners will achieve this by supporting businesses to transform exciting ideas into new products and services that will drive business and economic growth.

### How can we help?

The Microelectronics iNet offers two key products to businesses;


**Business Assists** – we provide tailored business support, equal to £1000 or 2 days of specialist consultancy, such as business development plans, legal audit, market assessment and advice and guidance on intellectual property.

**Projects** – our supported projects, which are typically in the region of £5,000 - £10,000, offer a form of more extensive assistance. Examples of such could include taking a new product from concept to first prototype or helping a business to enter a new market.

All of the services offered by the Microelectronics iNet are free of charge and offer businesses a lightweight and rapid process to access support.

### What to do next?

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# Picochip and ASTRI launch first commercial-grade LTE small cell reference design...

**P**icochip and the Hong Kong Applied Science and Technology Research Institute (ASTRI) have launched the industry's first commercial-grade LTE FDD femtocell physical layer software. The PC8609 software is now generally available to Picochip's customers around the world.


Picochip and ASTRI started their close collaboration on LTE femtocell reference design in the middle of 2008 for both LTE FDD and TD-LTE. The two companies demonstrated the world's first TD-LTE femtocell prototype in February, 2009 at Barcelona and have been working on both LTE FDD and TD-LTE since.

To ensure that the PC8609 software is ready for FDD femtocell commercial

deployment, the two companies have completed more than 10,000 tests to validate the software integrity, including functional, performance, conformance and stack integration tests. The level of maturity brought from this test effort has led to the successful integration of the PC8609 with several protocol stack software (both 3rd party and customer) which have passed interoperability tests with multiple commercial LTE terminals and core networks. The TD-LTE version, the PC9608, is undergoing similar testing.

"This is not 'example code' or 'demo-ware', this is a fully tested, verified and carrier-class, deployable baseband system," said Nigel Toon, CEO of Picochip. "For both 3G and 4G there are more basestations in the world that use

our software than that of any other silicon supplier. Our experience in deploying high-volumes of systems that rely on the quality and robustness of our PHY is represented and captured in the PC8609. We appreciate the professionalism and skill of the ASTRI team in working with us to get this carrier-class product developed, tested and released."

"We have been working closely with Picochip on this product since 2008," said Dr Nim-Kwan Cheung CEO of ASTRI. "This has been a very productive partnership, and we are delighted that Picochip has been able to make the LTE small-cell system generally available to the customers. We look forward to working together on future products." 

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## ... as it announces seven Chinese customers...

**P**icochip now has seven TD-SCDMA customers for the Chinese 'small cell' market.

Panda Electronics is using its PC8808 TD-SCDMA technology in a femtocell. Founded in 1936 Panda is the backbone enterprise of CEC (China Electronics Corporation) and has a strong focus on communications. The Group is the national communication high-tech R&D centre and an important industrial base.

Previously announced customers are

BTI, Digimoc and Fentel. For WCDMA technology, Picochip has over 30 customers with commercial products, including Cisco / ip.access (supplying AT&T and others) and ALU, supplying Vodafone group in ten countries and others. In addition, Picochip has seventeen customers for its LTE small cell products, for both LTE FDD and TD-LTE.

"China's mobile infrastructure is progressing at an incredible rate and manufacturers and developers are

looking for companies who can offer support for the full range of standards, including TD," said Rupert Baines, VP of Marketing at Picochip.

"We are the only company to offer the full portfolio in TD small cells, both 3G and 4G, and now, with Panda Electronics, we have almost 20 Chinese customers. We are very pleased with our success in China and with the achievements of our Beijing design centre who have developed these products." 

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## ...and teams with Lime Micro to power basestation on a card

**T**wo SouthWest companies – Picochip in Bath and Lime Microsystems in Fleet – are at the heart of the industry's smallest basestation design developed by Cambridge Consultants.

Sidewinder is the smallest commercially available 2G and 3G small-cell platform and is aimed at mobile phone communications and professional radio as it is software

configurable between GSM/GPRS/EDGE, WCDMA/HSPA+ and other SDR applications, providing new levels of adaptability for cellular base stations. It offers a low cost of entry for companies wishing to exploit these standards and sets a new benchmark in flexible, cost effective designs.

The unrivalled flexibility is based upon two novel technologies. On the front end, Sidewinder makes use of the class-

leading flexible radio device from Lime Microsystems Limited. Connected to this is Picochip's latest PC312 Femtocell Baseband SoC, delivering a high performance DSP and an ARM application processor combined with low power consumption, making it suitable for some battery-powered applications. Sidewinder can also be easily integrated into base station or

*Continued >*

mobile units for Police, Emergency Services and other professional radio users.

“We have been working with Cambridge Consultants for many years,” said Rupert Baines, Vice President of Marketing at Picochip. “In Sidewinder they have applied their expertise to develop a high quality reference design for companies looking to get a head start in today’s mobile communications market. We are very pleased to have our technology be part of such a groundbreaking design.” Philippe Roux, Vice President of Business Development at Lime Microsystems, added: “The strength of Sidewinder is Cambridge Consultants’ novel use of the LMS6002D multi-standard, multi-frequency transceiver IC, which fully exploits our chip’s flexible nature. We look forward to collaborating on future projects and pushing the boundaries back even further on what is possible.”

[www.picochip.com](http://www.picochip.com)



Assisted Living Action Network

[www.assistedlivingaction.net](http://www.assistedlivingaction.net)

**Business Networking Event**  
**NHS Whole Systems Demonstrator**  
 Lessons Learned

**Tuesday 20th September 2011 5.30-7.30pm**  
 Bath Ventures Innovation Centre, Broad Quay, Bath, BA1 1UD

**Speakers:**

- **David Tyas** - Service Improvement / Telehealth Manager, **Long Term Conditions NHS Cornwall and Isles of Scilly**
- **Trevor Drage** - Assistive Technology Manager, **Cornwall Council**

Register Here [www.assistedlivingaction.net/index.php/events/nhs-whole-systems-demonstrator/](http://www.assistedlivingaction.net/index.php/events/nhs-whole-systems-demonstrator/)

Delegate Places £10 (inc. refreshments)

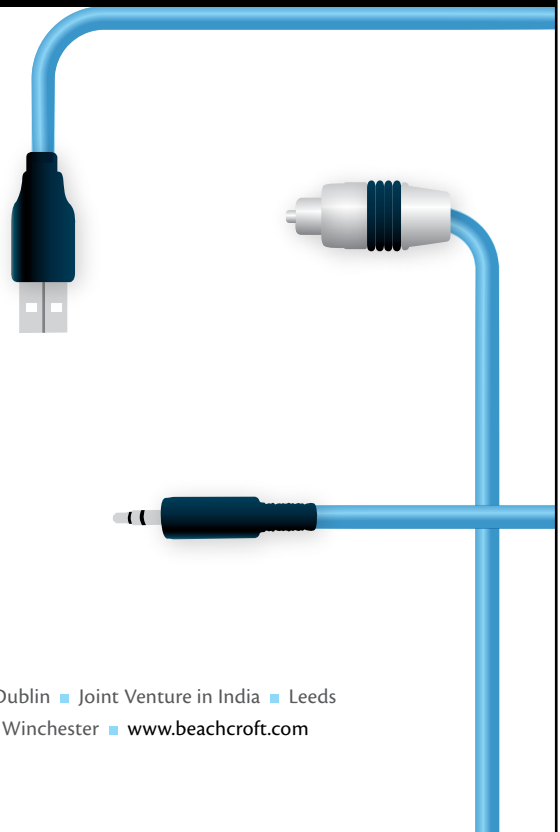
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# Compliance Clinic – High Speed Digital

As design margins are forced to be tighter, compliance testing is becoming increasingly important to a number of standards. For some standards, it is mandatory to have a formally tested your design to a number of required tests. For all standards compliance testing protects both the users of your devices as well as yourselves against subtle compatibility issues occurring in the field.

Complying with a standard can appear daunting; translating a design specification into a relevant set of tests is difficult. Producing a complete test specification that can be reliably performed with detailed margin analysis is a significant challenge. Performing these tests, in particular occasionally, is also challenging and error prone; it can be difficult to achieve consistent results when tests are performed months apart.

To help you better understand the issues,

Agilent technologies and Microlease are offering a free compliance clinic to members of Silicon southwest. These clinics are aimed at taking your hardware and running a compliance test suite on the design. The focus will be primarily on HDMI, USB, PCI-e and DDR physical layer compliance. The compliance clinic will be equipped with Agilent's real time, high-bandwidth oscilloscopes and Agilent applications engineers will be on hand to help with probing, running the compliance tests and discussing the implications of the results. The results will be available to take back with you for further analysis.

If you do not currently have hardware, but you would still like to discuss and explore the compliance test, you are still more than welcome to attend.

To register your interest in booking an appointment at the clinic, please email [greg.hambley@microlease.com](mailto:greg.hambley@microlease.com)

## Bath researchers find similarities between Apple and Samsung designs

Researchers from the University of Bath have developed a method for testing the relationship between product appearance and brand recognition that has shown there to be a significant number of similarities between the Apple iPhone and Samsung Galaxy S.

Key to the research undertaken at the University of Bath, Apple claimed that Samsung's products infringe on the grounds of 'Trade Dress'. This means that Apple were claiming that the Samsung Galaxy S phone was so similar to the iPhone consumers might become confused and assume it was an Apple product.

"The case Apple brought against Samsung is really interesting. It not only highlights the importance of product appearance in brand recognition but also provided me with a case study in which I could test the brand recognition software I have developed," said Charlie Ranscombe who is carrying out the research as part of his PhD. "I carried out tests between ranges of smartphones, including all those made by Apple and Samsung, along with a competitor brand." Charlie's method involved taking a number of images of each product from every angle and using these to trace the key measurements of each product's features on a computer. The measurements were then run through a piece of software Charlie has developed that will analyse the measurements of key features from each image and numerically

describe similarities and differences. "A couple of specific details on the smartphones came out as being incredibly similar," he said. "The proportions of some key features on the iPhone and the Samsung Galaxy S came out as being numerically very alike, including the metal surround on both phones."

## SW Events

**Smart Grid Mission to Germany**  
19th September 2011  
[www.ukti.com](http://www.ukti.com)

**Smart Buildings and Sustainable Environments**  
Wednesday 21 September 09:30 – 16:00  
FlyBe Training Academy, Exeter  
[www.inets-sw.co.uk/microelectronics/event/smart-buildings-inet-innovation-lab/](http://www.inets-sw.co.uk/microelectronics/event/smart-buildings-inet-innovation-lab/)

**DVclub: Assertion-Based Verification**  
Monday 26th September 2011  
Infineon, Bristol  
[www.dvclubbristolsept2011-eorg.eventbrite.com/](http://www.dvclubbristolsept2011-eorg.eventbrite.com/)

**Energy Efficient Silicon Design**  
Tuesday 27 September  
Bristol Golf Club, Almondsbury  
[www.nmi.org.uk/events/event-details/sld\\_sept11](http://www.nmi.org.uk/events/event-details/sld_sept11)

**Viva Entrepreneurs: The rise of the Adventure Capitalist**  
Dinner 29 September & Networking Seminar 30 September, 2011  
Bath Ventures Innovation Centre, Bath  
[www.siliconsouthwest.co.uk](http://www.siliconsouthwest.co.uk)

**LEP Microelectronics Group Feedback**  
Friday 30th September 2011,  
After Viva Entrepreneurs  
Bath Ventures Innovation Centre, Bath  
[www.siliconsouthwest.co.uk](http://www.siliconsouthwest.co.uk)

**Take the Leap ...into fabless**  
Watershed, Bristol  
Wednesday 5 October  
18:00 – 21:00  
[www.inets-sw.co.uk/microelectronics/event/take-the-leap-into-fabless-2/](http://www.inets-sw.co.uk/microelectronics/event/take-the-leap-into-fabless-2/)

**Verification Futures: The next 5 years**  
Tuesday 15th November 2011  
Hilton Hotel, Reading  
[www.verificationfutures2011-eorg.eventbrite.com/](http://www.verificationfutures2011-eorg.eventbrite.com/)

**Silicon 2011**  
Dinner 24 November & Networking Seminar 25 November, 2011  
Beachcroft LLP, Bristol  
[www.siliconsouthwest.co.uk](http://www.siliconsouthwest.co.uk)

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