



## Triple boost for region's HPC

Two startups and a major conference are boosting the role of High Performance Computing (HPC) in Bristol & Bath.

Two engineers from BAE Systems are set to launch their startup that makes it easier and cheaper to use cloud computing from companies such as Amazon for simulation.

The first focus for Zenotech is more power and cost friendly computational fluid dynamics, but the underlying technology opens up HPC clusters to a wide range of users.

At the same time Hybrid Clusters in Bristol has raised \$1m from an impressive range of global backers to further develop its HPC cluster management software.

The fourth Multicore Conference brings together the world's leading experts in multicore and high performance silicon on June 12th. With a keynote by Prof David May and sessions led by NVIDIA, Intel and Imagination Technologies, the conference will also see the first demonstration of the Epiphany 2W 64core image processing chip by Embecosm in Southampton.

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## Two year boost for Microelectronics iNet

The Microelectronics iNet is to be extended for another two years, subject to final contract. The program will now run until July 2015 providing matched funding for SME's in the southwest after helping 180 companies in the region.

"This is a ringing endorsement of the success we have had in the last three years, helping nearly 180 innovative young companies bring their ideas closer to market, creating new products and services and helping to create new jobs and growth," said director Rick Chapman. "We aim to work with over 120 more companies in the next two years and building further on our success."

[www.inets-sw.co.uk/microelectronics](http://www.inets-sw.co.uk/microelectronics)

## Work starts on iconic Enginshed conversion

Work has started to transform Brunel's terminal for the Great Western Railway into a launch pad for the next generation of technology businesses. Rydon Construction has been appointed by Bristol City Council and the University of Bristol to refurbish the Grade 1 Listed Engine Shed into a business and innovation centre.

Managed by the Bristol SETsquared Centre, it also houses the inward investment team for Bristol and Bath. "This is such an exciting project, both for the University's SETsquared Centre but also for the Bristol and Bath city region, and we are delighted that work is now underway to deliver the iconic space that we have planned for," said Nick Sturge, Director of the Bristol SETsquared Centre.

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

*The High Tech News banner was developed by Nanoscope Services in Bristol which provides diagnostic services to global semiconductor companies. The image of the Clifton Suspension bridge is just 8 microns long, milled into the bond wire of a silicon chip. [www.nanosopeservices.com](http://www.nanosopeservices.com)*

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## Hydrogen power enters the call centre

Bristol startup Auriga Systems has seen its hydrogen power system used as the uninterrupted power supply for call centres.

Hydrogen is used with a fuel cell, with the power management designed and built by Auriga. The system is being used in a call centre in Glasgow that supports customers such as DHL and Boots and was installed by Scottish company Linnett Technology.

This provides more power than battery systems, powering equipment for longer, and in places where a diesel generator is impractical as it is a third of the weight. The Glasgow call centre is on the third floor of a listed building, and the company had previously seen power outages of 20 minutes that could not be covered by a battery system.

The fuel cell stack is bought in from US supplier Ballard, and Auriga also uses voltage regulators from Powerstax in Farnborough.

Auriga's technology is also powering the UK's only hydrogen-power boat, Hydrogenesis, which is running in Bristol docks for the next six months. There are also discussions on using hydrogen power in fork lift trucks to replace a diesel generator and for roadside information signs. "Fuel cells have been out in the harbour in all conditions and we are proving it works in all conditions," said Jas Sungh,, managing director of Auriga and a former satellite engineer in Bristol. Auriga has helped install the city's first hydrogen re-fuelling plant on the harbourside which could act as the starting point for other hydrogen-powered equipment.

[www.auriga-energy.com](http://www.auriga-energy.com)

## Region hosts top universities in rankings

Bath and Bristol host two of the UK's top technology universities according to the latest league table published in The Guardian this week.

The University of Bath particularly has risen to 7th place for 2104, up from 9th this year and 14th in 2012, putting it just behind Durham and London's UCL. While the University of Bristol fell from 18th to 23rd in the overall rankings for 2014, which are based on a mix of teaching, spending and added value, it is ranked 4th in the UK for Computer Science and IT, with Bath at 7th. Bristol also ranks 10th in the UK for electronic engineering with Bath at 21st.

Both universities have a very high rating of 79% for career prospects. UWE ranks at 64th with Bath Spa University at 78th.

[League table](#)

## LEP launches Growth fund across Bristol and Bath...

The LEP has launched its £25m Growth Fund under the brand of Going for Growth. The fund aims to support up to 400 companies in Bristol and Bath with matched funding from £10,000 to £1m. Expressions of interest are open until June 14th while the scheme closes at the end of July for applications. The focus is on generating or safeguarding jobs and there are a range of elements to the scheme, from providing capital investment to supporting research and development. While 100% support is possible for small startups the fund is looking at some level of matched funding.

[www.goingforgrowth.biz](http://www.goingforgrowth.biz).

## .. as seminar looks at additional funding schemes

The Going for growth scheme was discussed at the recent funding seminar organised by the High Tech Sector, alongside Innovation Vouchers and other options such as TSB competitions and their own innovation voucher scheme.

The voucher scheme run by Science City Bristol provides up to 60% of a £10,000 project to work with an academic institution that you have not worked with before. This could include running market research or user programmes as well as time from a researcher. The example quoted by Caroline Clark of Science City Bristol saw a medical device developer using the voucher to work with a university on user testing. The programme has a quick turnaround through the University of Exeter.

The seminar also covered European funds and the Technology Strategy board which runs competitions for funding and has its own, separate voucher scheme.

[More information on Innovation Vouchers](#)

## **£12m home healthcare technology project kicks off in Bristol**

The University of Bristol is leading a new £12m project to look at the use of sensors for healthcare in the home. The SPHERE (Sensor Platform for HEalthcare in a Residential Environment) project will work in partnership with Bristol City Council, IBM, Toshiba and Knowle West Media Centre (KWMC) as well as the Universities of Southampton and Reading. The collaboration will develop home sensor systems to monitor the health and wellbeing of people living at home.

“SPHERE aims to have a profound impact on the health and wellbeing of people with a wide range of different health challenges,” said Professor Ian Craddock, Director of the collaboration and who will be leading the interdisciplinary team. “Families, carers, health and social services professionals involved in all stages of care will benefit from the system. SPHERE will address real world challenges by developing a practical technology to monitor people’s health in the home environment, targeting health concerns such as; obesity, depression, stroke, falls, cardiovascular and musculoskeletal diseases. ”

“Although healthcare budgets and changing demographics are creating serious challenges, the latest technological advances can help society keep pace with this environment,” said Rodric Yates, Program Director in IBM’s Chief Technology Office, who spoke at the recent Silicon SouthWest tech trends event. “We will contribute by drawing upon some of the best examples from around the world in healthcare sensing, medical data collection and analysis, and the delivery of healthcare systems. Improving patient care in a cost-effective way and helping people stay independent, for longer, is an objective we share with the University and the city.”

“This further establishes Bristol’s reputation as a leader in smart technologies. This award means that we’ve now attracted £26 million over the last year in funding for high tech development,” said Cllr Barbara Janke, Cabinet Member for Connected Cities and Wellbeing.

The collaboration’s vision is not to develop fundamentally new sensor technologies for individual health conditions, but rather to bring everything together simultaneously through data-fusion and pattern-recognition from a common platform of non-medical/environmental sensors at home. The system will be general-purpose, low-cost and accessible. Sensors will be entirely passive, requiring no action by the user and suitable for all patients, including the most vulnerable.

An example of SPHERE’s home sensor system could be to detect an overnight stroke or mini-stroke on waking, by detecting small changes in behaviour, expression and gait. It could also monitor a patient’s compliance with their prescribed drugs.

[www.bristol.ac.uk](http://www.bristol.ac.uk)

## **Bath and ST to develop fibre optic detector**

Another healthcare project announced last month is the Multiplexed ‘Touch and Tell’ Optical Molecular Sensing and Imaging project. Led by the University of Edinburgh with Heriot-Watt University and the University of Bath, along with ST Microelectronics, this is developing a fibre-optic device to detect potentially fatal lung conditions in intensive care patients, and to continuously monitor the blood in critically ill adults and babies without the need for blood sampling.

[www.epsrc.ac.uk](http://www.epsrc.ac.uk)

## **Creative and digital hub opens at Temple Meads**

Boosting the positioning of Temple Meads for enterprise, a new ‘hub’ has opened to provide quirky and creative office environment aimed at creative and digital businesses.

“Back in 2008 we analysed the markets and realised Bristol has an innovative and creative demographic similar to Amsterdam, Utrecht and parts of London,” said Richard Pearce, managing director for London-based developer TCN UK. Since then, we have invested around £7 million redeveloping firstly Bristol and Exeter House and now Temple Studios, and we already have 32 businesses installed there.” These include advertising and design agencies and a music school.

The entrance to Temple Studios on the ground floor sets the scene for the whole building, with the reception housed in a shipping container.

Plans for the final phase of the site include a new £13 million office development know as One Bristol, targeted at the technology, media and telecoms sector, along with a 120 bed hotel.

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

## Zenotech aims to simplify high performance computing

Bristol startup Zenotech has developed software technology to simplify HPC clusters and reduce the amount of power that is needed. It has developed software to allow a simple web interface to combine cloud computing and internal computing resources with detailed billing information for both. This would allow corporate IT to provide additional simulation resources by using cloud-based clusters.

The first application for the startup, set up by the two engineers from BAE Systems, is for computational fluid dynamics running on cloud computing resources. This was written from scratch to take advantage of highly parallel multicore GPU chips that are increasingly available on cloud services, says Jamil Appa, director and co-founder of Zenotech. These can provide 7x the performance of mainstream processor clusters for simulation applications for the same cost, says David Staningford, the other director and co-founder.

The company is set to launch in the coming weeks, making the web interface available for use and will be presenting at the multicore conference on June 12th. It has been backed by a Technology Strategy Board SMART award for Energy Efficient Computing. "We are using that to bootstrap us into various sectors," said Staningford. "If we do it right its something that self scales," he said.

While at BAE Systems Advanced Technology Centre, the two pioneered computational engineering on gaming computer hardware that is at the core of the Centre for Fluid Mechanics Simulation (CFMS) that has been used by Microsoft, Williams F1 and Rolls Royce.

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

## HybridCluster raises \$1m for HPC software

HybridCluster, a Bristol-based early stage software solution provider to the cloud and hosting industry, has raised \$1m funding and launched version 2.0 of its integrated suite of storage, replication and web clustering software. Amongst the investors are established industry figures including Jason Seats (former VP of Engineering of Rackspace Cloud), Charles Grimdsdale (partner at Eden Ventures and former CEO & founder of OD2), Anil Hansjee (former Head of Corporate Development, Google EMEA) and Toivo Annus (former Head of Engineering at Skype).

"For too long web hosting companies have lived in fear of unforeseen failures, spikes in traffic or user error striking their operations, stopping their business in its tracks," said Luke Marsden, CEO and founder at HybridCluster. "With this investment in the company we are now able to launch Hybrid Cluster 2.0 and compete effectively in the hosting market across Europe and North America."

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

## Unleashing heterogeneous multicore architectures

Prof David May will open the debate at the fourth annual Multicore conference on June 12th at UWE in Bristol. Tony King-Smith from Imagination Technologies will deliver the second keynote on "Heterogeneous Architectures".

The day will focus on how to maximise the performance of heterogeneous architectures whilst minimising power with talks from Intel, nVidia, Imagination and ARM as well as parallel sessions on architecture, low power and high performance. Delegates will also get the chance to get hands-on experience with a number of major tools. With over 150 delegates expected there is also good opportunities for networking. [Register here for the agenda and free entry to the event on June 12th](#)

Jeremy Bennett from Southampton startup Embecosm will be discussing a multicore floating point processor "Epiphany", intended for use as a co-processor in low power applications that need high floating point performance. Typical applications are software defined radio and image and video processing. During the hands-on tools session Jeremy present the processor architecture and its associated software tool chain. The demo will show one of only two 64-core prototypes in the UK. This has a cumulative processing capacity of 100 GFlops, yet draws only 2 watts of power. As well as high-end implementations, there will also be a release of a 16-core version of the chip on a \$99 board in mid-2013. With twin ARM cores and an FPGA fabric also included, this is an ideal device for rapid prototyping of novel applications.

[Multicore conference](#)



# Crowdfunding – the new funding source for businesses

*Mark Wesker of Osborne Clark looks at the pitfalls to look out for with this increasingly popular method of raising funding*

Since the Credit Crunch of 2008/9, many businesses (especially small businesses) have found that the bank manager's door has been firmly shut in their face. Banks were no longer willing to lend. At the same time, partly as a result of a prolonged period of low interest rates, many private individuals were searching for investments which offered the possibility of a return. Against this backdrop, crowdfunding has emerged as a new source of finance for businesses to plug this gap.

In basic terms, crowdfunding is a means of allowing businesses to obtain investment direct from private individuals, typically relatively small amounts from a relatively high number of individuals. A typical amount to be raised through a crowdfunding platform is somewhere from £50,000 to £500,000.

Normally this would be via a web-based crowdfunding platform, on which the business seeking investment will provide information to prospective investors. It can be combined with other sources of finance, such as venture capital investment, grants or traditional bank finance.

The precise structure of the investment and the way the process works differs from platform to platform. The main difference in terms of structure is whether the investment offered is equity or debt. Investors who invest for equity will receive shares in the company. This means that they will share any increase in the value of the company if the business is a success, but will be behind other creditors if the business becomes insolvent. For debt, investors will expect to receive their money back over a certain period, together with interest. There are other structures which offer a hybrid of the two.

Clearly, from an investor's perspective, equity investment offers a potentially greater return than debt, but at much greater risk. From the perspective of the company seeking investment, debt is a fixed cost which will need to be serviced and which will eat into profits, but any equity investment would dilute the other shareholders' interest in the company. For a technology business, particularly where it is pre-revenue, equity is likely to be the most attractive option, as the business will not be generating cash to service the debt.

Once a company has decided which form of investment is right for them, they will choose a crowdfunding platform (who will take commission from the funds raised), set the terms of the deal to be offered to investors, and write the description of the business and provide any other information required by the platform or otherwise to market the investment.

From a legal perspective, the making of an offer to prospective investors through a crowdfunding platform is a bit of a minefield. There are myriad laws and regulations which are intended to protect investors from the unscrupulous. Ultimately, a director of a company which seeks investment through a crowdfunding platform needs to understand their obligations to the investors. In particular, the directors are responsible for ensuring that any information given to investors on which they rely is true, accurate and not misleading (whether by omission or otherwise). To the extent that information isn't correct, there can be personal liability for directors, which can include criminal liability.

Crowdfunding is therefore not without risk. However, it offers smaller businesses an opportunity to tap into a source of funding which might otherwise not be available to them.

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

*One of the leading equity based crowdfunding platforms is based in the SouthWest. Exeter startup CrowdCube launched the UK's first FSA approved equity platform in 2011 and has just raised £1.5m for itself in just three days on its own platform. It has several high tech projects from across the UK.*

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

## Wittenstein signs up new distributor for safety RTOS

Bristol-based embedded software developer Wittenstein High Integrity Systems has signed up Hitex Development Tools as a distributor for its SafeRTOS safety critical real time operating system. Coventry-based Hitex is a subsidiary of Infineon Technologies supplying tools and consultancy for embedded engineers through subsidiaries and distribution offices in 30 countries.

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

## Formal Verification: The Facts

*The world's leading chip designers using Formal Verification came together with EDA vendors in Bristol to discuss the start-of-the-art and the barriers to further adoption. Mike Bartley, CEO of organiser [TVS](#), sets out the views on how best to verify that chips actually work properly.*

“How can I justify adoption of formal to my management?” We all have limited budgets which are currently mostly dedicated to dynamic verification, usually simulation, which would need to be diverted to static formal methods. Formal verification vendors have been working hard to answer this question and have been developing a number of applications or “apps”. This is where they package up a narrow application of formal into a “push-button” solution – examples include Clock Domain Crossing, Connectivity Checks, “Super Linting”, coverage unreachability analysis, register map validation. It is easy to demonstrate that these apps improve productivity as reported by James Pascoe of STMicroelectronics using SoC Connectivity Checking as an example.

So we can justify the application of formal apps (assuming the license cost is outweighed by the cost saving) but how about the wider application of formal verification to functional correctness of a design. ARM use a mnemonic “AHAA” (Avoidance, Hunting, Absence and Analysis) which was also used by Lawrence Loh of Jasper when describing how the full breadth of Jasper’s formal technology can be applied.

“Avoidance” means helping designers to write bug-free RTL and Lawrence explained how their visualization feature allows designers to generate waveforms according to constraints and properties written by the designer. A number of users agreed that use of formal early in the design gives good ROI. Ashish Darbari and Sam Elliot of Imagination said that using formal early in the design flow improves specification, design bring-up, verification and enables sign-off – a process that has currently been used for some projects, and is gradually rolled out on more projects within Imagination. Geoff Barrett of Broadcom also explained how the formalisation of master-slave interfaces leads to a better understanding of the “contract” between the blocks and hence better RTL. They are then able to prove the RTL correctness against the contract. Alex Netterville of ARM explained how formal was applied early to a block in their GPU IP avoiding the need for a “bring-up test bench”. It allowed bugs to be found much earlier in the design process leading to cost savings.

“Hunting” aims to find the bugs we failed to avoid. Obviously the apps mentioned earlier help but could formal improve on constrained random? Doug Fisher of Synopsys explained how Magellan’s hybrid approach increased the ability of formal analysis to find deeper bugs. James Pascoe of STMicroelectronics reported on a block that had been verified in dynamic verification but additional bugs were found when Jasper’s FPV formal verification app was applied.

“Analysis” refers to the analysis of bugs using formal. For example, Alex Netterville explained that when an errata arrives then a number of properties are developed to do further formal investigation in the vicinity of the bug. Julia Dushina of STMicroelectronics explained how they had debugged a complex bug inside a DMA IP on a chip by creating the conditions for the bug in a property checker and generating a simulation trace of the bug. The debug took 2 weeks using formal but Julia estimates it would have taken 3 to 6 months in the lab otherwise. A clear demonstration of the Return on Investment just in engineering costs but significantly higher when time-to-market and opportunity costs are factored in! Others also commented that they had also accelerated silicon debug through the use of property checking.

“Absence” tries to demonstrate the absence of bugs. Alex Netterville reported on a memory system verification project at ARM where a micro-architectural formal specification was developed and important properties proven. By demonstrating the RTL implemented the formal specification they were able to infer those properties for the RTL. Tim Blackmore of Infineon compared complete formal verification using 'operational properties' (with the OneSpin tool) with more traditional property checking and reported on how the complete approach had been used successfully on the TriCore CPU. Tim also talked about how “Around 40% of TriCore verification team have applied methodology successfully”, an impressive percentage and adoption was a theme many were interested in.

James Pascoe of STMicroelectronics explained how they were taking the approach of having a group of experts to drive adoption suggesting the approach of widespread training has failed in the past.

[Continued on page 7](#)

## **Audium technology lives on in new spinout**

The audio amplifier technology developed by Audium in Bristol is seeing a new lease of life in a new spinout. Audium was acquired by NXT, which renamed as Hiwave Technologies plc and went into administration earlier this year.

HiWave Audio is part of a new Cambridge-based private company called HiWave Technologies (UK) and is offering stand-alone audio products including balanced mode radiator (BMR) loudspeakers and audio amplifier chips and modules.

“We will continue to direct our energy at closing customer deals, developing the consumer audio market and creating world-leading solutions,” said Caroline O'Brien, CEO of HiWave and chief operating officer of the former company. “As a private enterprise, we are able to focus our efforts on commercialisation of BMR and Audium amplifier solutions.” The first is a Bluetooth module using the HiAS2002 amplifier to provide three times the battery life of other systems.

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

## **XMOS powers world's first Ethernet-AVB-enabled wireless conference audio equipment**

Low cost multicore silicon from XMOS in Bristol is being used for a new line of high-quality audio-equipment from beyerdynamic in Germany using the new Ethernet-AVB streaming audio format. This provides higher quality across Ethernet-based wireless such as WiFi.

beyerdynamic's Quinta is a system of microphones and control units designed for wireless use in conferences, large-scale meetings and videoconferencing. XMOS' hardware, for the first time, offers the combination of high performance, predictable-timing, low-latency, small size, cost-effectiveness and ease-of-development required to make Ethernet-AVB-enabled wireless conference devices practical.

“XMOS' technology has, in effect, allowed us to steal a march on our competitors, bringing out a unique conferencing solution ahead of our competitors,” said Marcus Rembold, Product Manager Conference, beyerdynamic. “Based on the ease-of-development and success of this solution we already have several other Ethernet-AVB-enabled audio devices in the works, and expect to rapidly see other audio companies following our lead. We're convinced that AVB has the potential to become the standard for transmitting audio data signals on a network, and XMOS has allowed us to get ahead of the curve.”

The XS1-L16A-128 and software allows Ethernet AVB to be used across wired connections, allowing beyerdynamic to develop entirely new solutions.

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

## **Continuing the challenges of Formal verification**

Ashish Darbari of Imagination described Imagination's view of formal and how at Imagination different groups ranging from specialists to internal D&V teams use formal in different ways to address both the validation and verification challenges. Adoption at ARM has been helped by high level managers buying into formal as a technology having been persuaded by hard evidence, as shown by the fact that 17% of engineers on their most recent CPU design are using only formal for functional verification. A key aspect to adoption is how to measure progress and integrating metrics with dynamic techniques.

Another issue is mutation testing where bugs are deliberately injected to see if the verification regression suites can find them. Sasa Stamenkovic of OneSpin explained how they have integrated mutation coverage into their tool to measure the coverage achieved by formal. The results can be accessed through a UCIS interface thus allowing integration with dynamic through tools like asureSign from TVS. Doug Fisher also explained how the Certitude mutation analysis tool from Synopsys acquisition of Springsoft can work with Magellan or other vendor's property checkers to measure the completeness of formal verification. Some of the audience were sceptical of mutation testing in general, as their experience was that it is both compute and license intensive. However, Anthony Wood of Imagination reported a project where they tried to evaluate a verification flow using only formal with no dynamic verification. They then used mutation testing to qualify that verification and found run times acceptable as properties tended to fail quickly.

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

## **Search starts for UK's most innovative wireless start-ups**

Discovering Start-Ups 2013, run by Cambridge Wireless and Silicon South West, is on a quest to find the most innovative wireless technologies and entrepreneurs from across the UK and says there is plenty of competition in the South.

The free-to-enter Discovering Start-Ups competition will give 15 finalists the unique opportunity to pitch their ideas, technologies and business plans to 20 leading wireless industry investors and experts. This year, the line-up of judges includes senior executives from companies including BT, Google, Orange Labs, Qualcomm Ventures, Samsung and Vodafone Ventures as well as investors such as Cambridge Angels and NESTA.

"In its fourth year, Discovering Start-Ups is now recognised as one of the leading UK-wide showcases for the very best in wireless innovation and provides a great opportunity for budding entrepreneurs and new businesses to get noticed," said Simon Bond, Founder of Silicon South West. "Any ambitious wireless start-up should jump at the chance to get in front of such a line-up of much sought-after investors and industry experts."

Last year's winning technologies included silicon carbide power semiconductors; a new software design automation system; a mobile-phone based service to detect skin cancer; and a radical single-antenna for portable devices; and a web service to find and share information. "The UK has a strong tradition of innovation in technology and engineering and the Discovering Start-Ups challenge demonstrates that we still have a rich seam of up and coming creative and talented designers and entrepreneurs," said Dr David Cleevly, Chair of Judges. "We are looking forward to reviewing this year's entrants and spotting the technologies and individuals that will help drive the future of the wireless and mobile industry." Bristol-based Blu Wireless Technology won the competition in 2011 in the first year was opened up to companies outside of Cambridge.

Five winners will each receive a £500 cash prize sponsored by Qualcomm Ventures along with a prestigious Discovering Start-Ups Trophy and a further opportunity to pitch to 400 global wireless delegates in the Innovation Hothouse at The Future of Wireless International Conference 2014 run by Cambridge Wireless. The winners will also get one year's free virtual membership to Cambridge Wireless and SETsquared, including a business MOT, networking and mentoring support, investor readiness training and the opportunity to be selected for various investor showcases in London and the US.

The closing date for entries is 15th August and Discovering Start-Ups is open to start-ups and early-stage companies and design groups in larger companies looking to exploit new technologies and students or academics in education. The event is sponsored by Qualcomm Ventures, along with Google, Rohde & Schwarz, SETsquared, Microlease/Agilent Technologies and Taylor Wessing, who will host the pitch event at its London headquarters on 30th September. The competition is also supported by London's Tech City.

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

## **Bristol hosts successful Developers Conference**

Over 30 vendors and more than 170 engineers enjoyed the UK's new event for the Electronics sector which saw Bristol as a key venue alongside Cambridge and Manchester.

The new conference for engineers, computer scientists and designers working to develop intelligent systems and devices saw more than 30 embedded system tool and technology vendors sponsoring the event and providing workshops, presentations and an exhibition. "The feedback has been very positive," said Richard Blackburn, Event Organiser. "The delegates really valued the technical content of the event, finding it both interesting and useful. The exhibitors valued the opportunity to meet with senior development engineers in a relaxed environment, enabling discussions regarding recent developments, new products and future trends. It was a very friendly and productive event, and we are very pleased with the way things turned out."

Workshops at the event discussed such topics as hardware/software interfacing, advanced debugging techniques and software coding standards for safety critical applications. The presentations explored recent developments in PCB CAD software, enclosure design, code verification

[www.device-developer-conference.co.uk](http://www.device-developer-conference.co.uk)



## Venturefest Bristol sets up for November

Venturefest Bristol 2013 will take place on Thursday 14th November at the UWE Conference Centre on the Frenchay Campus.

The event is aimed at SMEs looking for funding opportunities and support; investors looking for new opportunities; and researchers looking to commercialise their work, as well as larger companies looking for opportunities for collaboration.

Registration will open soon, and applications are being taken for the Innovation Showcase. This provides a platform for up to 40 of the best new and emerging technology businesses will be chosen to demonstrate their idea to the Venturefest audience. The closing date to apply for the showcase is 12th September. Please see [www.sciencecitybristol.com](http://www.sciencecitybristol.com) for more information.

## Gnodal keeps up momentum with new 40G switch

Bristol networking systems developer Gnodal has launched another networking switch based around its ground-breaking chip technology.

The GS0036, launched at the global Interop trade show in the US, provides 36 ports of 40 GbE built into a thin 1RU form factor. This provides congestion management and dynamic load-balancing, allowing the switches to operate at near 100% bandwidth utilization for Cloud and Big Data environments where large 10 GbE edge aggregation is required to accommodate very large numbers of virtual clients as well as High Performance Computing applications that may require native 40 Gbps capability for high scalability and throughput.

With an initial port-to-port latency as low as 282ns, the GS0036 provides extreme low latency for a single 40 GbE switch. When combined with other members of the GS-Series, additional latency of only 66ns per switch hop allows multi-stage networks containing thousands of ports to be assembled with an overall system latency as low as 414ns. This makes the GS-Series ideal for latency sensitive applications, including HPC clusters and data centre applications, as well as financial trading systems.

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

## UltraSOC ships universal multicore debug IP to PMC-Sierra

Cambridge startup UltraSoC has tapped the region's multicore skills for a Design Centre at the Science Park and is now working with US chip designer PMC-Sierra to incorporate its innovative silicon IP technology into PMC's next generation of storage controllers.

The development program is expected to lead to PMC taking a licence and incorporates UltraSoC's library of advanced debug IP that provides a system-level capability for multiple heterogeneous processor cores, including graphics cores and custom accelerators. This enables early detection of software and hardware bugs as well as other important optimisation capabilities for memory interfaces and system fabrics.

The technology is anticipated to be rolled out in chips in the latter part of 2013 and the imminent silicon validation of UltraDebug on an advanced process node represents a significant milestone in the Company's development enabling new licensees a high level of confidence in the adoption of a universal debug solution.

"As future generations of complex SoC's deliver ever more sophisticated electronic products it will be necessary to integrate increasing amounts of heterogeneous multicore processors," said UltraSoC's CEO, Karl Heeks. "To effectively debug these systems it will be hugely beneficial to have a flexible and scalable solution provided by an independent company as an alternative to current in-house solutions or existing debug technologies that are linked to a single architecture."

"Analyzing complex hardware and software interactions in high-end SoCs requires insight into what is happening through the entire device. PMC partnered with UltraSoC because we recognized that their unique monitoring and debug infrastructure would give us the needed visibility to both enhance our device operation and accelerate our time to market for our customers," said VP of Product Development for PMC's Enterprise Storage Division, Salman Ghufuran. UltraSOC is backed by Octopus Ventures and is chaired by Matthew Trowbridge, formerly head of Hitachi and Renesas Europe and a former chairman of ProVision Communications in Bristol.

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

## Funding on the cusp

As 2013 progresses, the signals from the global economy are decidedly mixed. Unemployment is up in the Eurozone, and countries are desperate for growth, and yet there are signs of revival around the world. High tech is the flavour of the day - the EU's Horizon 2020 programme identifies technology in its many forms as the key enabler of future growth, and the EU is doubling its commitment. And yet our own commitment is half hearted. Our regional finance programme requires funding to be matched by 40%, even 60% from startups. If high tech is truly the opportunity to build the companies of the future (as we clearly believe with such a strong technology base in the region) then now is the time to commit.

The current funding environment is hampered by an 'old school' approach to creating jobs rather than wealth, and with an interpretation of EU rules that is too strict. The recent seminars on funding (see page 2) have shown small startup companies that there isn't anything that mainstream funding can help them with. **This is shortsighted.**

Talented technologists and entrepreneurs are constrained by the rules that are set up to prevent large companies from taking even more advantage of European funding than they already do. In the process we kill the next generation of innovation, and make no mistake, we are killing it. We need an investment mechanism that will support a wide range of technology startups with the expectation that 50% will fail and 30% will provide a reasonable return for new jobs and money in the regional community - but 20% will be stellar performers bringing wealth, credibility and further investment to the region.

We can't do that within the existing structures, so innovation in funding is vital. We have a once in a generation opportunity to really boost the technology base in the region and we are in very real danger of squandering it. But this needs all kinds of companies to engage to demonstrate that new approaches are needed, and now is the time.

**Nick Flaherty**

## INDUSTRY EVENTS

Wed 12th June 9am-5pm  
[Multicore Challenge Conference](#)  
UWE Frenchay campus, Bristol

Wed 12 June 6pm – 9pm  
[Challenging Obstacles and Barriers to Assistive Living Technologies \(COBALT\)](#)  
University of Bath Innovation Centre

25th June 6.30pm - 8.30pm  
[IET Smart Technologies for Assisted Living & Bristol Network AGM](#)  
Location TBC

Tues 2nd July 2pm-5pm  
[Science City Bristol Workshop - Getting your message across](#)  
Ashfords Solicitors

8th -12th July  
[Bath Entrepreneurship programme](#)  
University of Bath Innovation Centre

6th Sept 9.30-5.30  
[openMIC#17: My Mobile startup](#)  
University of Bath Innovation Centre

30th September  
[Discovering Startups](#)  
London

14th November  
[Venturefest Bristol](#)  
UWE Conference Centre, Frenchay

21st November  
[Digital Health event](#)  
Bristol

## About the West of England Local Economic Partnership

The West of England Local Enterprise Partnership supports business growth and is working to attract new jobs to Bristol, Bath and Weston-super-Mare. The structure supports the LEP Board in making it happen, backed by multiple Sector Groups including the High Tech Sector which meets once a month. More information on the vertical and cross cutting sector groups is [here](#). For more information or to get involved join [the LinkedIn group](#) and sign up for the [High Tech Sector Newsletter at SW Innovation News](#) for news of events and Special Interest Groups

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