CW INTERNATIONAL CONFERENCE

CWIC Starter: LPWAN & IoT

Tuesday 28 March 2017

Hosted by Cambridge Computer Labs

This CWIC Starter is championed by **Nick Hunn** from the CWIC Committee and the Connected Devices SIG.

Venue: Computer Laboratory, University of Cambridge, 15 JJ Thomson Avenue, Cambridge CB3 0FD

AGENDA

10:00	Registration and networking with refreshments
10:30	Welcome from host Cambridge Computer Labs
10:40	Introduction to CWIC Starter, **Nick Hunn, WiFore**
10:45	**'What is LPWAN & the IOT - Technology Review'** **Tim Whittaker, Cambridge Consultants** Once upon a time LP-WAN meant GPRS, and if your use case didn't allow enough power for that, then you were on your own. Today though there is a selection of technologies to connect your low-powered sensor or detector directly to the cloud, while allowing you to keep going for several years on a modest battery, or for ever if you could harvest a bit of energy. Not only technologies, but services too to deliver these small amounts of data to central servers - allowing you to concentrate on the ends where the value is. This session describes some of the technologies on offer and where they might be best applied. Oh, and GPRS is rapidly on the way out, so you may be needing these sooner than you thought...
11:20	**'Choosing an LPWAN Solution: A business perspective'** **Antony Rix, 8power** With so many technical options for LPWANs, what should you do? This talk highlights the business impact of some of the main choices and shares experience on what is required to deliver a solution to market.
11:50	**'The LPWAN & IoT Value Chain'** **Nick Hunn, WiFore Consulting** Choosing your LPWAN is just one part of a complex jigsaw which makes up any IoT solution. The choice of LPWAN is rarely the most important decision. This talk looks at the overall value chain and explores how that may influence the decisions around the communications choice.
12:20	**'The Infrastructure of IoT and Metaplatforms'** **Paul Green, Iotic Labs** We are discovering that the IOT is not simply about connecting things but has a great deal to do with how things interrelate. This is because every business, government, utility, city or individual exists within a wider community and geography that influences their behaviour, decisions, and activities. The things that influence us may be in a completely different domain, but we might not have access to their data. Paul will explore how very different things might 'interoperate' and how IOT infrastructure can reflect the relationships we have in our business and social communities, while still providing privacy and security.
13:00	Lunch and networking
14:00	**IOT LPWAN Boost** **A progress report on the Boost programme in Cambridge**
14:30	**LPWAN Agony Uncles – Q&A** **Panel: Paul Green, Nick Hunn, Antony Rix, Tim Whittaker**
15.10	Refreshments and networking
15:40	**The CWIC Innovation Programme** **Ali Nicholl, Iotic Labs; Geoff McCormick and Gair Matthews, Account Manager, ANSYS UK**
16.00	**Why I choose and support LPWAN: company presentations** **'Antenna Design is a key part of LPWAN and NB-IoT Success'** **Colin Newman, Antenova @Antenova_m2m** Antenova will explain why the company is supporting LPWAN and show some foils on the topic of antenna design issues for LPWAN and NB-IoT, highlighting the company's new LPWAN antenna: Latona.

16:15	**'Creating a data economy'** **John Bechtel, BadgerPass @johnbechtel2** The rollout of LPWANs will deliver more sensors and thus more data. But where is the value, and where is the money? The development of a data economy will transform the Internet of Things to an ecosystem whereby data is traded, openly and appropriately.
16:30	**'A Leap in the Dark'** **Steve Clarke, AMIHO Technology @AMIHOtechnology** No power, no network, no hope? IoT communications is enabling creative methods to reach those things that would otherwise be left in the dark. Steve Clarke shows how LPWAN is connecting hard-to-reach utility meters.
17:00	Q&A
17:15	**Event closes**

With the permission of the speakers, presentations will be loaded to the CW website on the day following the event

Profile of organisers

Cambridge Wireless (CW)

CW is the leading international community for companies involved in the research, development and application of wireless and mobile, internet, semiconductor and software technologies. With 400 members from major network operators and device manufacturers to innovative start-ups and universities, CW stimulates debate and collaboration, harnesses and shares knowledge, and helps to build connections between academia and industry. CW's 18 Special Interest Groups (SIGs) provide its members with a dynamic forum where they can network with their peers, track the latest technology trends and business developments and position their organisations in key market sectors. CW also organises the annual Future of Wireless International Conference and Discovering Start-Ups competition along with other high-quality industry networking events and dinners. With headquarters at the heart of Cambridge, UK, CW partners with other international industry clusters and organisations to extend its reach and remain at the forefront of global developments and business opportunities. **www.cambridgewireless.co.uk**

Profile of host

The Computer Laboratory, University of Cambridge

The Computer Laboratory is an academic department within the University of Cambridge that encompasses Computer Science, along with many aspects of Engineering, Technology and Mathematics. Current research areas include bioinformatics, computer architecture, computer vision, distributed systems, graphics and human-computer interaction, logic and semantics, machine learning, natural language processing, networking and wireless communication, operating systems and virtualization, programming, security, and sustainable computing. It consists of 41 academic staff, 29 support staff, 5 research fellows, 81 post-doctoral research workers and 119 PhD students. We have over 300 undergraduates studying for Part I, II and III of the Computer Science Tripos and 36 graduate students studying for the MPhil in Advanced Computer Science. **www.cl.cam.ac.uk**

Profile of CWIC Committee Lead & SIG Champions

Paul Green, Iotic Labs

Paul originated Arkessa in 2006 – the business that provides remote internet services to multitudes of machines. He is currently creating the services Arkessa will offer in five years' time. His professional life combined engineering and science has taken him through a variety of roles, including design and production engineering, business planning, marketing and corporate sales, mainly in the telecommunications sector. Interestingly, the first product he introduced to manufacture is now is in the Science Museum in London. A passionate and committed Christian, Paul is as excited about materials science and quantum physics as he is interested in railways, walking, skiing and the natural world. **iotic-labs.com**

Nick Hunn, WiFore Consulting

For the past twenty years, he has been closely involved with short range wireless and communications, designing technology that helps to bring mobility to products, particularly in the areas of telematics, M2M smart energy and mobile health. He is closely involved with the Bluetooth SIG, the Continua Alliance and other medical and wireless standards bodies. He is the author of "The Essentials of Short Range Wireless" - a book attempting to explain the application of wireless technology to product developers. **www.wifore.com**

Antony Rix, 8power

Dr Antony Rix is founding CEO of 8power, startup developing wireless monitoring technology based on leading research from the University of Cambridge. 8power is one of the winners of CW Discovering Startups 2016. Before joining 8power, Antony spent 12 years working at TTP, the leading product and technology consultancy, developing connected devices and services for a range of markets. He previously co-founded network quality assessment specialist Psytechnics, undertook R&D and standardisation at a major network operator, and studied engineering at the universities of Edinburgh and Cambridge. **www.8power.com**

Tim Whittaker, Cambridge Consultants

Cambridge Consultants was started in 1960 to pioneer the delivery of independent design and development services in electronic, mechanical and product engineering: we are one of the founder companies of the high-technology Cambridge phenomenon. Our history of world-class services is augmented by our development of intellectual property in telecommunications, software, silicon and medical devices, and by more than 20 successful spin-out ventures (3 of which were worth more than $1 billion: Cambridge's total is 15). Today Cambridge Consultants employs 750 engineers, scientists, project managers and technicians with offices in Cambridge UK, Seattle, San Francisco and Boston in the USA, Singapore, New Delhi and Tokyo; we provide the full range of services for excellent product design to a worldwide client base in the wireless, consumer, industrial and medical markets. Tim Whittaker is a System Architect in the Wireless business unit, where he has taken the technical lead in projects using radio standards like LoRa, GSM, Bluetooth, ZigBee, Wi-Fi, DECT, and in the creation of many specialist communications schemes for new applications, or to use new spectrum allocations. **www.cambridgeconsultants.com**

Profile of speakers

Antony Rix, 8power

Profile as above**. www.8power.com**

Nick Hunn, WiFore Consulting

Profile as above. **www.wifore.com**

Paul Green, Iotic Labs

Profile as above**. iotic-labs.com**

Geoff McCormick

Geoff has worked as a business consultant in the design industry for over 10 years. In that time, he has worked with some of the world's most famous and successful designers, where his role was to help designers, companies and brands to try and maximise the commercial effectiveness of design. His experience covers every populated continent and a diverse range of sectors, including developing a mobile petrol retail station, an interior design system for VIP aircraft, hydrogen powered vehicles, packaging strategies for FMCG brands and innovation programmes utilising Asian sourcing. It is this breadth of experience that he values most. Common across all of his clients and projects is the desire to create truly unique experiences that occupy a space in peoples' hearts and minds.

Gair Matthews, Account Manager, ANSYS UK Ltd

Gair Matthews is an ANSYS UK account manager, working with customers using Engineering Simulation from most industrial sectors, including: Medical, Aerospace, IoT, Pharma, R&D Consulting, Electronics, Offshore Oil and Gas… Being based in Cambridgeshire, Gair has an increasing passion to support local Startups and Incubators access ANSYS simulation software. **www.ansys.com**

Ali Nicholl, Iotic Labs

Focused on communication and engagement working across Iotic Labs' clients and projects, Ali is passionate about enabling and empowering individuals and organisations to experience and exploit the IoT economy. He is focused on collaboration within and amongst communities and the co-creation of transformative services and solutions, bringing disparate organisations together to share data and knowledge to create solutions through community design. He supports individuals and organisations through the flexible design process to generate prototypes swiftly that prove out bottom-up solutions, ongoing revenue generation and new business models and capabilities. **iotic-labs.com**

Colin Newman, Antenova

Colin Newman has over 30 years' experience in the electronics and telecommunications industry. He joined Antenova in June 2007 and was appointed CEO in January 2014. Colin has worldwide responsibility for Antenova's direct sales, marketing, engineering development and production of Antenova's full range of antennas and RF antenna modules into its target markets. Colin holds a BSc in Electronics Engineering. **www.antenova-m2m.com**

John Bechtel, Badger Pass

John Bechtel is the founder of Badger Pass, a consultancy supporting small Internet of Things technology companies, and is CEO of Mango Labs, an online marketplace that brings buyers and sellers of data together. He has lived in Canada, the UK, Japan and Australia, settling in knee-friendly Cambridge UK. He has contributed to the Weightless, HyperCat and ETSI V5 standards, and is a Cambridge Wireless SIG champion in software and open source. John holds a Bachelor's degree in Systems Design Engineering from the University of Waterloo in Canada, attended Henley Management College MBA school, and is a certified PRINCE2 project management Practitioner. **www.badgerpass.co.uk**

Steve Clarke, AMIHO Technology

Steve is technical director at IoT communications company Amiho Technology. Prior to this he was a senior engineer at the BBC, lecturer at Salford University, designed AV processors and led the development team of ACIS (now Vix Technology), enabling them to become the UK's largest bus telematics and real-time information company. **www.amihotechnology.com**