

## Connected Devices SIG “IoT - Brave New World or Simply Evolved M2M?”

13<sup>th</sup> March 2014

Hosted by: Microsoft Research    Sponsored by: **arkessa**

*This SIG is championed by **Antony Rix** of TTP, **Nick Hunn** of WiFore Consulting, **Paul Green** of Arkessa & **Tim Whittaker** of Cambridge Consultants*

Venue: Microsoft Research Ltd, 21 Station Rd, Cambridge CB1 2FB

### AGENDA

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<b>11:00</b>	Registration & Networking over Coffee & Tea
<b>11:30</b>	Introduction to the Connected Devices SIG by <b>Antony Rix</b> of TTP
<b>11:35</b>	Welcome from our host <b>Bozidar Radunovic</b> of Microsoft Research
<b>11:40</b>	Welcome from our lunch sponsor <b>Paul Green</b> of Arkessa Sessions chaired by <b>Paul Green</b> of Arkessa
<b>11:50</b>	<b>“The Enterprise and the Internet of Things - Evolution or Revolution?”</b> <b>John Hicklin, Principal Consultant   Commercial Enterprise Markets, CGI UK</b> ABI report that 75% of CIOs are looking to develop a strategy for the Internet of Things. This focus is creating significant exposure to the area of machine to machine technologies and their development to meet the vision for this next wave of connectivity. It is also raising important questions as what is needed to make the dream a reality. How you unlock the data within the organisation, re-think your business model and re-imagine your stakeholder engagement are just some. Success in addressing these will determine whether the potential revolution is achieved.
<b>12:10</b>	Q&A
<b>12:15</b>	<b>“Overcoming the Internet of Things Connectivity Challenge”</b> <b>David Dunn, Software Engineer, Electric Imp</b> Many people are calling 2014 the year of the Internet of Things. Electric Imp may not know much about calendars, but we are experts at connected hardware. Integrating Internet connectivity into products is more difficult than most companies realize. There are a myriad of challenges that are often overlooked in the early stages of connected product design, ranging from selecting the proper protocol, security, to building a scalable platform for thousands to tens of thousands of connections. This presentation will examine these challenges and offer insight into how they can be easily overcome through using a connectivity platform such as Electric Imp.
<b>12:35</b>	Q&A
<b>12:40</b>	<b>“Real-life experiences from rolling out M2M networks and how we can learn from these in the shift to IoT”</b> <b>Jon Lewis, Chief Innovation Officer, Plextek Consulting</b> Plextek Consulting has rolled out numerous M2M networks supporting over 6 million devices based on our Ultra Narrow Band technology. Each deployment has its own commercial and technical challenges and these will only increase in the shift to IoT. This talk will present how we have provided flexibility in key areas so that all of the stakeholders’ goals can be met..
<b>13:00</b>	Q&A
<b>13:05</b>	Buffet Lunch & Networking Sessions chaired by <b>Tim Whittaker</b> of Cambridge Consultants
<b>14:05</b>	<b>“The role of LTE in M2M”</b> <b>Georg Steimel, Head of M2M Solutions, Huawei</b> The presentation explores the challenges of mass adoption of cellular M2M connections and how the industry can deal with it.
<b>14:25</b>	Q&A

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<b>14:30</b>	<b>“Using networked visualisation for better decision making”</b> <b>Fredrik Sjostedt, Vice President   Corporate Marketing, Barco Ltd</b> In today’s business environment we are pressured to take faster and faster decision, and with the “internet of things” our input matrix gets ever extended. These two aspects makes it increasingly more difficult to 1) get a clear view of a specific or ongoing situation, 2) involve the correct stakeholders and decision makers at the right time, regardless of their location. In this session we will look at how organisations are using networked visualisation to address this complexity.
<b>14:45</b>	Q&A
<b>14:50</b>	Networking over Coffee & Tea Sessions chaired by <b>Nick Hunn of WiFore Consulting</b>
<b>15:25</b>	<b>“Regulatory backdrop on IP and standards issues for the M2M eco-system”</b> <b>Justin Hill, Co-Head of the Patent Prosecution Group and Purvi Parekh, Co-Head of International Telecoms, Olswang</b> Regulators are questioning whether there are enough tools to tackle IoT and M2M, particularly as the scope of M2M services becomes even more international. Bodies such as the European Commission, the OECD and the Federal Trade Commission have all debated potential regulation to address the challenges, including the creation of dedicated standards to open up this market. Because of this 2014 is expected to see changes in the regulatory environment that will impact the whole M2M eco-system. In parallel there is an uptake in patent filings and IP issues around IoT and M2M. This talk will survey the various types of patent claims which tend to be used in this sector and give a brief overview of the standards institutions IP policies.
<b>15:45</b>	Q&A
<b>15:50</b>	<b>“The impact of autonomous systems on surface transport”</b> <b>Paul Copping, Corporate Development Director, TRL</b> How will the market for surface transport evolve over the next 10 – 30 years? When can we expect a big leap forward in autonomous vehicles? Will IoT architectures enable modal integration and intelligent mobility? Is it realistic to expect that we will have some autonomous vehicles on UK public roads in less than ten years? Can we achieve much higher utilisation of the rail network in the same time frame? How will all this affect journey times, safety, productivity and emissions? Is the brave new world going to be a commuter’s paradise or a more intelligent form of gridlock?
<b>16:00</b>	<b>"Connected Products - Designing for Scale"</b> <b>Pilgrim Beart, Founder Director, 1248-io</b> Getting one device online is usually quite easy, but as your "estate" of devices scales into thousands and millions, new challenges occur at each order of magnitude. Pilgrim will share his and his colleagues' experiences of scaling at companies like AlertMe, and explore new approaches and standards that can help.
<b>16:10</b>	<b>“A new standard to connect the Internet of Everything”</b> <b>Antony Rix, Senior Consultant, TTP</b> Mass market connected devices require a low-cost connectivity technology. Building on successful projects developing products that have been deployed in multi-million unit volumes, TTP is now launching the 4 <sup>th</sup> generation of its Matrix system. This offers high efficiency, long range telemetry at low cost and low power. This presentation will compare Matrix with leading alternatives to highlight why a new standard is needed and how it helps enable the Internet of Everything.
<b>16:20</b>	Q&A with the speakers listed above chaired <b>Nick Hunn of WiFore Consulting</b>
<b>16:30</b>	Debate/Vote/Panel Session on topics discussed with all speakers – Chaired by <b>Philip Laidler of STL and Paul Green of Arkessa</b>
<b>17:15</b>	<b>Fill in Evaluation Forms &amp; Event closes</b>

*With the permission of the speakers, presentations will be loaded to the Cambridge Wireless 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 & 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 20 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. For more information, please visit [www.cambridgewireless.co.uk](http://www.cambridgewireless.co.uk)

### Profile of Host

#### Microsoft Research, Cambridge

Established in 1997, Microsoft Research Cambridge in the United Kingdom was Microsoft's first research laboratory to be established outside the United States. Today, more than 100 researchers from throughout Europe work in Cambridge on programming languages, machine learning, computer vision, human-computer interaction, operating systems, networking and computational science.

For more information, please visit: <http://research.microsoft.com/en-us/labs/cambridge/>

### Profile of Sponsor

#### Arkessa

Arkessa enables the Internet to securely extend to all remote equipment for monitoring, management and control. Arkessa M2M communication services employ multiple GPRS and 3G networks plus innovative estate management facilities to deliver worldwide connectivity. This infrastructure is coupled to secure data hosting, management and web portals to create user-defined dashboards displaying information from remote sensors and enabling control of remote devices. Delivering the optimum in simple to use two-way connectivity, with intuitive user interfaces and management tools is central to Arkessa's philosophy. The systems builder or integrator can be confident in the security, reach and integrity of the services Arkessa provides throughout Europe, with built-in fixed address, security, multiple 2G and 3G network coverage and customised tariffs. This is underpinned by The Ark, providing industrial-strength infrastructure and network operations. For more information, please visit [www.arkessa.com](http://www.arkessa.com)

### Profile of SIG Champions

#### Paul Green, Arkessa

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 year's 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 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. For more information please visit [www.arkessa.com](http://www.arkessa.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. Nick can be contacted at [nick@wifore.com](mailto:nick@wifore.com)

#### Dr Antony Rix, TTP

Dr Antony Rix is a Senior Consultant in the Communications and Wireless group at TTP, Europe's leading independent technology consultancy and product development company. He has led projects in areas including mobile TV, phone apps, network planning, and novel short-range and wide area wireless technologies. Antony is currently engaged in business development and programme management in wireless healthcare and in safety-related radio systems, where he focuses on developing breakthrough products and services for TTP's clients based on applications of technology. Before he joined TTP in 2004, Antony worked at BT's Research Laboratories and then co-founded Psytechnics, a successful start-up company developing quality of service and network monitoring software.

Antony has a Ph.D. from the University of Edinburgh and a Masters in Engineering from the University of Cambridge. He is a member of the American Telemedicine Association, Institute of Engineering and Technology and Audio Engineering Society, and he co-chairs the Cambridge Wireless Special Interest Group on Connected Devices. For more information please visit [www.ttp.com](http://www.ttp.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. Today Cambridge Consultants employs 350 engineers, scientists, project managers and technicians with offices in Cambridge, UK and Cambridge, MA in the USA; 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 Bluetooth, ZigBee, DECT, and in the creation of specialist communications schemes for new applications, or to use new spectrum allocations. For more information visit [www.cambridgeconsultants.com](http://www.cambridgeconsultants.com)

## Profile of Speakers

### **Pilgrim Beart, 1248-io**

Pilgrim has more than 20 years' experience leading innovation in ground breaking, high-technology companies, four of which he co-founded in Cambridge. After a degree in Computer Engineering, Pilgrim designed innovative computer systems at start-ups in Cambridge and Oxford, then for six years led technology teams in three start-ups in Silicon Valley. In 1998 he headed back to Cambridge where over the past 15+ years he has co-founded four companies: activeRF (indoor location systems), antenova (multi-band smartphone antenna systems), and AlertMe (a Smart Home platform used for Home Energy Management) where he is Founder Director and 1248 (scalable horizontal services for IoT) where he is CEO. Pilgrim is a Fellow of the IET and in 2013 was a Visiting Fellow at the Cambridge University Computer Laboratory. For more information please visit <http://1248.io>

### **Paul Copping, TRL**

Paul Copping is Corporate Development Director at TRL Ltd – the Transport Research Laboratory. He is responsible for new market development and innovation services, with a current focus on satellite, robotics and autonomous systems – plus immersive visualisation and exploration of big data in a transport context. Before joining TRL in 2007, Paul worked in corporate development, marketing strategy and software consultancy at Nortel, Toshiba, BT and ICL. He has an MBA in Marketing from Cass Business School and an MA in Modern Languages from Corpus Christi College, Cambridge. For more information please visit [www.trl.co.uk](http://www.trl.co.uk)

### **David Dunn, Electric Imp**

David Dunn brings a wealth of software development expertise in the professional and academic sectors to his role as software engineer for Electric Imp, an innovative Internet of Things startup that offers a powerful platform to connect devices to the Internet simply. At Electric Imp, David draws upon his experience with numerical algorithms to develop software that runs on the company's hardware products and cloud servers. He is actively involved in developing automated system testing, which ranges from unit-testing Electric Imp's embedded and cloud software to the entire system. David earned a Bachelor of Science in Mathematics from University of Southampton and a Master of Science, Nonlinear Dynamics and Chaos, and PhD in Applied Mathematics from University College London, University of London. For more information please visit [www.electricimp.com](http://www.electricimp.com)

### **John Hicklin, CGI UK**

John is a Principal Consultant with CGI UK working in their Commercial Enterprise Market Business Unit where he is responsible for shaping the go to market strategy. He has a Telecoms background having had senior product management roles within both Vodafone and Orange prior to joining Logica (now CGI) 6 years ago. He has led the launch of innovative data solutions for service providers and is now involved in helping clients benefit from emerging technologies. Engagement with M2M solutions has been a common strand over John's 17 years in Telecoms and he has had a leading role in developing CGI's M2M/IoT strategy. For more information please visit [www.cgi.com](http://www.cgi.com)

### **Dr Justin Hill, Olswang**

Justin is Co-Head of Olswang's Patent Prosecution Practice. Justin has been regularly recognised as a leader in IP by all the main legal directories. The 2013 edition of Chambers UK ranks him as one of an elite group of band 1 individuals in the UK who provides "*excellent service for all aspects of IP prosecution*". Justin is a Chartered Patent Attorney and a European Patent Attorney. He has more than 15 years of experience in wireless and fixed networks, internet, semiconductor, computer implemented inventions, software, including M2M and IOT technologies. For more information please visit [www.olswang.com](http://www.olswang.com)

### **Dr Jon Lewis, Plextek Consulting**

Jon Lewis is Plextek Consulting's Chief Innovation Officer and is responsible for developing technology for new markets. Jon has previously worked in various research, development and leadership roles in NEC, Toshiba, TTPCom and Motorola. He holds a number of patents related to telecommunications and has a PhD in Signal Processing. For more information please visit [www.plextek.com](http://www.plextek.com)

### **Purvi Parekh, Olswang**

Purvi is Co-Head of Olswang's International Telecoms practice. Her experience spans all kind of network and platform including mobile, fixed line and satellite. She has advised on some of the most innovative projects affecting

the telecoms market today, including network sharing (active and passive, light and deep), MVNOs, M2M, mobile payments, convergence and 4G/LTE. Purvi also advises on the regulatory aspects of telecoms work. Her experience in telecoms regulation includes proposals for the EU single market, roaming, network access, MVNO and M2M regulation, leased lines, net neutrality and numbering & portability issues. For more information please visit [www.olswang.com](http://www.olswang.com)

#### **Dr Antony Rix, TTP**

See profile in SIG Section

#### **Fredrik Sjostedt, Barco**

Fredrik leads the global corporate marketing function covering all of Barco's division and ventures. This includes the marketing planning and execution across all the 90+ countries where Barco is currently active. Prior to this role Fredrik was VP of Strategic Marketing for the Advanced Visualisation Systems division at Barco. In this role he led the product management, product marketing, industry marketing, strategic alliances and technical marketing function – and ultimately drove the development of the go-to-market strategy for the division's product and solutions portfolio. He's got over 20 years of experience in the IT industry, gathered in both technical and marketing roles with hardware/software vendors including VMware, Symantec, Apple and 3Com. Fredrik studied systems analysis and mathematics at Lund University in Sweden and holds a Master of Business Administrations from the Henley Business School at University of Reading in the UK. For more information please visit [www.barco.com](http://www.barco.com)

#### **Georg Steimel, Huawei**

Georg joined Huawei in 2011 Huawei manages the M2M device business in Europe. This includes Business Development, Sales, Marketing and Technical Support. Before taking over the position at Huawei he worked as independent consultant for international customers and market analyst. He is also the founder of the M2M Alliance e.V. and its first Chairman until 2012. He started his career at the German Car Manufacturers Association VDA before he joined T-Mobile Germany where he held different positions in business marketing. Georg holds a university degree in economics. For more information please visit [www.huawei.com](http://www.huawei.com)

### **Profile of Debate Chair**

#### **Philip Laidler, Director Consulting, STL Partners/Telco 2.0™ Initiative**

Philip has 20 years of experience in strategy, marketing and corporate development and 15 years in TMT. He has worked for fixed and wireless operators both as a senior executive and consultant. His focus is on strategic planning, corporate development and strategic marketing. He held senior management roles for 7 years at MCI International including strategy, product management and business transformation Additional consulting experience with Braxton Associates, Cambridge Strategic Management Group and DDV-Logica. He has an MSc from the London School of Economics and an MA from Cambridge University. For more information please visit [www.stlpartners.com](http://www.stlpartners.com)

#### **Paul Green, Director of Innovation, Arkessa**

See profile in SIG section