

## A Joint Event between the Digital Communications Knowledge Transfer Network & Cambridge Wireless Future Wide Area Wireless SIG

### “Spectrum and the New Economy”

24<sup>th</sup> September 2009

Championed by Stirling Essex of CRFS, Graham Maile of Plextek and Geoff Varral of RTT Programmes

Venue – Buckingham House, Murray Edwards College, Cambridge CB3 0DF

#### **Spectrum and the New Economy – the first of a series of three meetings**

This is the first of a series of three meetings organised by the Cambridge Wireless Future Wide Area Wireless (Spectrum and Standards) Special Interest Group.

This first meeting, ‘**Spectrum and the New Economy**’ studies the role that radio spectrum and has to play in national economic recovery. In particular we study how techniques that deliver improved spectral economic efficiency could or should influence future spectral policy and/or deliver long term **market** advantage to the UK.

The next meeting, ‘**Standards and the New Economy**’ will address the interrelationship of standards making and economic progress.

The third meeting ‘**Networks and the New Economy**’ will analyse the convergence that is taking place between wireless and wire line networks at technology level, the impact this is having on industry business models and how network convergence can deliver long term **competitive** advantage to the UK.

If you are interested in sponsoring or speaking at the second and third event then please contact [admin@cambridgewireless.co.uk](mailto:admin@cambridgewireless.co.uk)

#### **AGENDA**

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09:30 **Registration & Refreshments**

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10:00 **Introduction to the Cambridge Wireless FWAWS/Spectrum & Standards SIG from Stirling Essex of CRFS**

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#### **Morning Session, chaired by Graham Maile of Plextek**

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10.10 **Welcome & Keynote Address - “Technology and Business Innovation”**

##### **Stuart Revell, Chair of the Wireless Technology & Spectrum Working Group**

A strong telecommunications industry is a necessary pre condition for economic recovery but the economic recession and the crisis in the financial services sector has resulted in cut backs in R and D and manufacturing investment. However there are a number of UK based **spectral sharing spectral efficiency innovations** that could significantly increase the profitability and international competitiveness of the UK telecoms industry and realise substantial social and economic value from a more broadly based user experience. The UK was one of the first countries to implement digital mobile GSM networks, the first country in the world to implement digital broadcasting with the launch of DAB in 1995 and DVB T in 1997, and one of the first countries to introduce digital two way radio. The UK presently hosts the worlds largest TETRA based public safety network. The UK will be one of the first countries to implement DVB –T2 broadcasting and has a leadership role in LTE standardisation.

This legacy combined with present development achievements provides the foundation for continued innovation in third generation radio access and radio broadcast technologies which help to reduce cost and open up new market and business opportunity in national and international markets. However it is important that spectral and government policy reflects both technology change and present market and business reality.

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10:30 **“The new spectrum economy (1) – the economics of Universal Broadband Access”**

**Phillipa Marks, Plum Consulting**

The UK government is attempting to encourage cellular operators to take on a universal broadband access obligation, either individually or collaboratively.

The economics of such an obligation are far from clear but are amenable to analysis provided **all** delivery options including FTTC and FTTH are considered.

For example, a more radical repurposing of UHF spectrum based on a closer coupling between terrestrial broadcasting and cellular could theoretically provide a plausible basis for investment but would be hard to reconcile with existing competitive market structures.

This session highlights the incompatibilities between economic theory and market reality that need to be resolved in order to support investment in ‘anywhere any time’ broadband service provision.

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11:00 **“The New Spectrum Economy (2) – Spectral Policy Options & Spectral Economic Efficiency?”**

**John Burns, Aegis Systems**

The report from the Independent Spectral Broker in May this year suggested a number of changes to present spectral management policy, re asserting the assumption that rebalancing lower and higher band spectral holdings, re farming the 900 MHz band and coupling the 2.6 GHz and 800 MHz auction process would yield an economic gain.

Do these policy recommendations fully reflect likely future technology trends and present business and market reality and are they likely to result in an increase or decrease in spectral economic efficiency?

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11:30 **Coffee/Tea & Networking**

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12:00 **“Spectrum and the New Silicon Economy – Semiconductor, Silicon and Spectral Value”**

**Alan Brown, Future Horizons**

Developments in radio access technology have the potential to create opportunities for new products and services which in turn create opportunities for component level added value.

In the past, the UK has had a leadership role in telecommunications silicon and continues to deliver world leadership in some but not all market segments.

Will convergence unleash a new wave of component level and product innovation?

Which companies are the most likely to prosper in a new radio silicon economy?

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12:30 **Panel Session / Q&A Chaired by Graham Maile of Plextek**

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13:00 **Buffet Lunch**

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**Afternoon Session, chaired by Geoff Varrall of RTT Programmes**

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14:15 **“The New Manufacturing Economy – Handset and Infrastructure R & D and Manufacturing Investment”**

**Ian Bartlett, Motorola**

The recession and related funding constraints have reduced handset and infrastructure R and D and manufacturing investment. Over 50% of the world’s cellular handsets are now manufactured in China with an increasing amount of local design content.

This may be an inevitable shift but some examples of the potential returns available from well focused well targeted investment much closer to home suggest a way forward.

In particular exchange rate movements have made the UK remarkably competitive for radio related research which in turn should create new local manufacturing opportunities.

What are the implications for future government industrial policy?

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14.45 **“The New Service Economy – Developed versus Emerging Market Opportunities – New Frontiers in the New Economy”**

**Tim Murdoch, M PESA**

Many companies from a broad cross section of industries, food and drink being one example, have built decades and in some cases centuries of profitable growth on the back of astute investments in emerging economies.

Mobile telecommunications are presently transforming the way in which business and financial exchanges are managed, a new economy based on micro financing and micro business.

Will the telecommunications industry be the saviour of emerging economies?

Will emerging markets be the saviour of the telecoms industry?

Will these new business models translate back to developed markets as we move towards a globalised social enterprise economy?

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15.15 **“Operator Capitalisation”**

**John Tysoe, The Mobile World**

Is the telecoms industry under capitalized or over capitalized? Is capital adequacy sufficiently evenly distributed in the industry?

Are present return on investment expectations realistic?

How does the UK compare with other countries in terms of spectral, industrial and economic policy and what needs to be changed?

Are new funding mechanisms needed to sustain future industrial growth?

Are we at the cusp of a transformation from industrial revolution to industrial reformation and is telecommunications a potential agent of change?

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15.45 **Panel Session / Q&A Chaired by Geoff Varrall, RTT Programmes**

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16.15 **Closing Remarks from DCKTN**

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16.25 **Fill in Evaluation Form**

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16.30 **Refreshments & Networking**

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17.30 **Event Closes**

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*With the permission of the speakers, presentations will be loaded to the Cambridge Wireless website on the day following the event  
Agenda is subject to change*

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## **About the [DCKTN](#)**

The Digital Communications Knowledge Transfer Network has been established by an industry-led group of leading players, with funding from the Technology Strategy Board. We seek to bring competitive advantage to the UK by promoting collaboration and knowledge sharing between the users and providers of Digital Communications, and helping to drive innovation in the sector.

## **Profiles of our SIG Champions**

### **Stirling Essex of CRFS**

CRFS develops and supplies spectral analysis tools for planning, monitoring, and licensing of wireless spectrum, based on innovative, low-cost distributed networks of broadband, real-time RFeye® spectrum monitoring nodes.

Stirling has been involved in wireless systems since the early days of GSM, and was subsequently involved in the development of test systems for CDMA (IS-95), and for 3G (W-CDMA), including responsibility for the development and marketing of 3G Test Mobiles at Ubinetics. He founded Espansivo, a wireless technology consultancy in 2005, and joined CRFS in June 2008. He is a co-champion of the Cambridge Wireless Future Wide Area Wireless SIG and is a member of the Cambridge Wireless Board. For more information visit [www.crf.com](http://www.crf.com).

### **Geoff Varrall of RTT Programmes**

Since 1986, RTT has been specialising in providing an international client base with technology assessment and technology related design support programmes. The company's knowledge and experience is principally in mobile terrestrial communications. RTT works closely with members of the Mobile Experts Groups within ETSI (European Telecommunications Standards Institute), and the international academic, scientific and industrial research community.

RTT's research focuses on 3G design and implementation, user equipment design, air interface and network design - areas of particular expertise include RF and IF processing (3G DSP), noise and gain budgets (OFDMA bandwidth gain), device options (RF, IF and baseband), design analysis, protocols and 3G network performance optimisation.

Over the past two years, RTT's research has extended to include the impact of technology convergence across six industries - computers, consumer electronics, IT, wireless, wireline, TV. For more information please visit [www.rtonline.com](http://www.rtonline.com)

### **Graham Maile of Plextek**

Plextek is one of Europe's largest independent providers of electronic product design, supply and consultancy. Its specialist business areas include telecommunications, security, automotive, defence, medical and optoelectronics. With a team of around 100 and skills in MMIC, radio, DSP, digital design, embedded software, design for manufacture, industrial design and production test equipment, the company is able to tackle any wireless project.

Graham Maile, Plextek's director of Strategic Consulting, has 30 years' experience in R&D, management and business start-up roles within the electronics and telecommunications industry. He co-champions the Cambridge Wireless Future Wide Area Wireless SIG and is a director of the Digital Communications KTN and an associate of Corbett Keeling Corporate Finance. For more information please visit [www.plextek.com](http://www.plextek.com)