

Virtual Networks SIG

'Hybrid networks – the challenges of combining public and private cellular networks'

15th June 2023

This SIG is championed by **Julie Bradford** of **Real Wireless**, **Mark England** of **Cambridge Consultants** and **Andrew Palmer** of **CGI**

Venue: The Hothouse, BT Adastral Park, Barrack Square, Martlesham Heath, Martlesham, Ipswich IP5 3RE

The Virtual Networks SIG has explored the rise in deployments of private networks and the interest in slicing in public networks in its most recent events, but the area that has most potential to disrupt the existing telecoms industry and spawn new architectures, business models and ecosystems will be hybrid networks (i.e. a combination of private and public networks). Technologies such as cloud deployments, edge computing, Open RAN, slicing and virtualisation will create new deployment architectures, but the diversification of connectivity that includes deployments incorporating private networks and neutral hosts will provide a greater choice of how to build, run and monetise networks and the services they support. This seminar will aim to highlight some of the new ideas and innovations that these new hybrid networks will introduce and enable.

AGENDA

10:00 Registration, refreshments and networking

10:30 CW (Cambridge Wireless) welcome

10:35 Introduction to topic by Julie Bradford, Virtual Networks SIG Champion and Head of technological analysis, Real Wireless

10:40 Welcome from host, Lisa Perkins, Director, Research & Innovation, BT

10:45 Session to be chaired by Julie Bradford, Virtual Networks SIG Champion

'Private and Hybrid Networks - The Challenges and Opportunities'
Paul Graham, Lecturer in Computer Science, University of Suffolk

Much has been discussed about the development of hybrid networks and the plethora of benefits they are expected to bring. However, before these networks can be fully exploited, a number of challenges need to be overcome. This talk will delve into the challenges associated with integrating hybrid networks and explore potential solutions to address them. Both technical and commercial issues will be covered, ensuring a comprehensive understanding of the topic. By the end of this session, attendees will leave with valuable insights into the obstacles faced deploying hybrid networks and the strategies that can be employed to overcome them, allowing for the realization of their full potential.

11:10 Q & A

11:15 'Hybrid Networks: Why and how?'
Maria Vatousi, Principal Architect, BT Group

While the interest in commercial Standalone Private Network deployments increases and operators trial network slicing to deliver private services over public networks, the concept of hybrid networks is emerging. In this talk, we will examine whether hybrid networks can deliver value to customers, and we will reflect on implementation challenges.

11:40 Q & A

11:45 'How can operators deliver greater value with MPN?'
Chris Bridgeman, Mobile Development Business Development Manager, Vodafone Business

In this presentation Chris will discuss how mobile operators can use their assets and experience to really deliver increased capability in the MPN market.

12:10 Q & A

12:15 Lunch break and networking

13:15	Session to be chaired by Andrew Palmer, Virtual Networks SIG Champion 'Real world examples of private and public mobile network roaming' Stephen Muldowney, Sales Manager, Athonet UK Athonet will be using its 15 years of expertise and knowledge from delivering reliable, secure & flexible private mobile networks to outline real-world examples of roaming between private and public mobile networks from those based on MOCN to those utilising specialist third party roaming service providers.
13:40	Q & A
13:45	'Private & Public Network Evolution – A Neutral Host perspective' Andrew Conway, Director of Engineering, BAI Communications BAI will outline a common platform approach. And how the technology, increasingly complex as it is, is not the central issue. It's all about business model – selling, delivering, service wrap. Neutral Hosts and other third parties are adapting for the challenge.
14:10	Q & A
14:15	Panel session chaired by Andrew Palmer, Virtual Networks SIG Champion and Consulting Director, CGI
14:50	Wrap-up
15:00	End of session and opportunity for informal networking
15:30	Event close

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 over 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 major conferences and start-up competitions 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

BT

We're one of the world's leading communications services companies. The solutions we sell are integral to modern life. Our purpose is as simple as it is ambitious: we connect for good. There are no limits to what people can do when they connect. And as technology changes our world, connections are becoming even more important to everyday life. Today, that's truer than ever. The connections we make are helping solve the world's biggest challenges such as the global pandemic, climate change and cyber security. Through the power of technology, we're supporting customers to live, work and play together better. We connect for good. www.bt.com

Profile of sponsors

3adesign

3 A Designs works with customers in the telecommunications and broadcast markets providing custom software and hardware engineering solutions. Our skills with both software and hardware ensure that your product is available on time and to specification. We use agile methodologies across our projects to ensure fast, efficient project delivery of both the hardware and software aspects of your developments. Our close link with manufacturing services allows us to provide rapid prototyping and international development. www.3adesign.co.uk

Anritsu

Anritsu is a provider of innovative communications test and measurement solutions. Anritsu engages customers as true partners to help develop wireless, optical, microwave/RF, and digital solutions for R&D, manufacturing, installation, and maintenance applications, as well as multidimensional service assurance solutions for network monitoring and optimization. Anritsu also provides precision microwave/RF components, optical devices, and high-speed electrical devices for communication products and systems. The company develops advanced solutions for emerging and legacy wireline and wireless technologies used in commercial, private, military/aerospace, government, and other markets. www.anritsu.com

IoTAS

With over 20 years of mobile device testing experience, as well as offering regulatory approvals and certification services, we help clients develop their products (Mobile Phones / Modules / IoT) through proven testing solutions across the World. Specialising in Live Network Testing solutions for cellular (2G/3G/4G/5G/CAT-M1/NB-IoT) communication, IoTAS is a UKAS accredited GCF recognised UK Test House for IOP and Field Trials as well as an Assessment Capable Entity, enabling us to assist Manufacturers in obtaining device certification. We are also full members of the GCF-TCCA Joint Task Force for Mission Critical Certification as well as Bronze Members of British APCO (BAPCO). www.iotas.co.uk **Twitter:** [IoTAS_UK](#) **LinkedIn:** [@IoTAS - Global Wireless Testing](#)

Profile of SIG Champions

Julie Bradford, Head of techno-economic analysis, Real Wireless

Julie has worked in the wireless industry for over 15 years. At Real Wireless, she is a thought leader in 5G business case analysis including understanding 5G use cases, quantifying (in financial terms) the operational and socio-economic benefits of 5G services and understanding network dimensioning and cost implications under 5G virtualised networks. She has most recently led Real Wireless' techno-economic analysis on the EC Horizon 2020 5G-MoNArch project. Inspired by the project's smart sea port testbed constructed by HPA, Nokia and DT in the Port of Hamburg, this analysis included quantifying the operational benefits of 5G to port authorities and other port users and the cost implications of delivering these industrial grade wireless services from existing mobile infrastructure via network slicing supported via the virtualised 5G-MoNArch network architecture. Previously, Julie was Communications Engineer at QinetiQ UK, consultant at PA Consulting UK, and Senior Systems Engineer for Airvana UK. real-wireless.com

Mark England, Associate Director, Cambridge Consultants

Mark England has spent three decades architecting, designing, and implementing a wide variety of wired and wireless communications products, services, systems and protocols; from short range point to point systems to those which operate on a global scale. Mark joined Cambridge Consultants in 2000, and for the past 17 years he has been providing leading edge design, development and consultancy services to a wide range of clients. cambridgeconsultants.com

Andrew Palmer, Consulting Director, CGI

Andrew has more than 30 years of experience in IT, Telecoms and TV and Media, having worked in various roles for IBM, AT&T, Ericsson, Motorola and Arris. Andrew's present role is to leverage existing CGI capabilities that match the needs of our clients in the Telecoms sector, as well as building new capabilities that will support the emerging and changing needs of our client base. Andrew has proven experience in developing and delivering complex SI and Services solutions that meet both business and technology needs. Andrew has co-authored "UK Telecoms For Dummies", an essential guide to the complicated UK Telecoms sector as well as articles for publications such as the Cambridge Wireless Journal including "How do we build the new world of 5g?". He frequently speaks at conferences and provides media commentary on industry topics like 5G, IoT and Smart Cities, as well as being a member of the Digital Policy Alliance's Smart Society Working Group, techUK Spectrum Policy Forum and the Cambridge Wireless Virtual Networks Special Interest Group. cgi-group.co.uk

Profile of speakers

Chris Bridgeman, Vodafone Business

Chris is a highly experienced IT and telecoms professional with a career spanning 25 years. For the past 16 years, he has been employed at Vodafone, a prominent telecommunications company. Throughout his tenure, Chris has been involved in numerous global projects of significant importance. Chris has also played a key role in marketing-led 5G

projects. As the fifth generation of wireless technology, 5G brings transformative capabilities and opportunities. Chris has worked on projects to promote and implement 5G solutions, collaborating with multinational corporations to deliver strategic mobility-based solutions. In recent years, Chris has focused on evangelizing the impact of 5G and mobile private networks to customers. He has been at the forefront of explaining the benefits and possibilities offered by these technologies, emphasizing their potential for innovation and driving business growth. Chris has also been instrumental in helping customers implement innovative solutions with 5G at their core, leveraging the power and speed of this advanced network technology. www.vodafone.co.uk/business

Andrew Conway, BAI Communications

Andrew Conway is Director of Solutions & Innovation at BAI Communications UK. BAI is a leading communications infrastructure provider that delivers neutral host solutions. Andrew is an industry expert in wireless cellular networks with three decades' experience in designing next generation networks. At BAI, Andrew was accountable for the technical solution proposal for the TfL project and more recently the Sunderland Smart City case. He describes his current role as bringing the possibility of innovative next generation technology to life, for everyone. Andy is Chair of the Tech UK Communications Infrastructure & Services Council as well as an executive board member of the Small Cells Forum. Andrew's core interests include the societal impact of mobile communications, shared infrastructure models and advocates the wider participation of women in the technology sector and young people exploring careers in STEM. www.baicommunications.com

Paul Graham, University of Suffolk

Paul has 28 years of experience in Telecommunications, having been part of the start-up eServGlobal. He was in the OCS division when it was acquired by Oracle in 2010, leading to the development of the Oracle NCC product. He is currently a technical consulting manager in Oracle's Communication Group. He is involved with 5G, Cloud Native and the monetization of Telecommunications services. Recently, Paul has served as the Director of UK Engineering for Matrixx Software. He played a key role in Matrixx's transition to adopting Cloud Native technologies and managed a group that has been at the forefront of the adoption, successfully conducting several 5G trials and implementations. Additionally, Paul serves as a visiting Fellow and occasional lecturer in Computer Science at the University of Suffolk and Digitech, based at Adastral Park, in collaboration with BT/EE. He is a chartered engineer and a Fellow of the Institute of Engineering and Technology(IET).

Stephen Muldowney, Sales Manager, Athonet UK

Stephen Muldowney is a Senior Sales Manager with Athonet, the global leader in private cellular network technology. Stephen has more than 25 years' experience at the forefront of the global telecommunications sector working with some of the largest vendors and with the latest advances in mobile and wireless technologies with a particular focus on LTE/5G private mobile networks. www.athonet.com

Lisa Perkins, BT

Lisa is director of BT's Adastral Park and research realisation. She is accountable for showcasing and commercialising the world class innovation and research at the Park to derive value for the business. She drives research into TV content and media and around connected smart technologies. She manages key partnerships with world leading universities and industry in conjunction with research programmes to encourage and develop premier class expertise. Lisa leads Innovation Martlesham a thriving tech cluster of 150+ companies. She actively promotes and drives an education enrichment programme, working with schools to encourage children and teachers to develop a love of technology. As well as being chair of Tech East and co-chair of the University of Suffolk DigiTech Centre, Lisa is a board member of UEA's Productivity East and the Innovation board for New Anglia Local Enterprise Partnership, vice chair of East Suffolk Council Community Partnership Board and a trustee for Lapwing Education. She is also a visiting professor at the University of Suffolk. www.bt.com

Maria Vatousi, BT

I have 17 years of working experience within the mobile telecoms sector, and I've had the chance to participate as an architect or technical lead in the design and/or delivery of multiple new technologies like PCC, 4G and, recently 5G SA. I hold an MSc (Distinction) in Techno-Economic Systems from the National Technical University of Athens, Greece, an MSc (Distinction) in Mobile Communication Systems from the University of Surrey, UK and a MEng in Electrical Engineering and Computer Technology from the University of Patras, Greece. I currently work in the Architecture function within BT Networks with a focus on Mobile Architecture Evolution and Private Networks. www.bt.com