Digital Delivery and Content SIG

'Internet Protocol Production – Why Move to IP at all? … And Why Now?'

28th November 2018

Hosted by Digital Catapult

This SIG is championed by David Crawford, **Ravensbourne University,** Russell Inman, **BBC Design & Engineering,** Chris Nokes, **BBC Research & Development** and Sami Susiaho, **The Cloud - A BSkyB Company**

Venue: Digital Catapult, 101 Euston Rd, Kings Cross, London NW1 2RA

AGENDA	
13:30	Registration
14:00	Introduction to Digital Delivery and Content SIG from SIG Champion **Russell Inman, BBC Design & Engineering**
14:10	**Welcome from host, Dr. Dritan Kaleshi, Head of Technology, 5G, 5G Fellow at Digital Catapult**
14:15	Session chaired by SIG Champion, Chris Nokes, BBC Research & Development **'Canal Factory: IP Live Production as a first step'** **Pierre Maillat, Canal+** Two years ago, Vivendi, Canal Plus mother company, decided to renovate studios and galleries located in the former Boulogne cinema studios. Pierre in his presentation will focus on the choices made more than 2 years ago, the experience of using IP in such a [quick] project and look at how IP could be envisioned as a first step of the modernization of our business, in media and broadcast.
14:35	Q&A
14:40	**'The Bloomberg IP Journey'** **Peter Storey, Bloomberg and Grant Hammond, Principal Consultant, dB Broadcast** Grant and Peter will showcase the timeline and technical decisions made to enable Bloomberg to go live at their new European headquarters from December 2017 with IP at the core. Grant will discuss the next generation of broadcast centres.
15:00	Q&A
15:05	**Refreshments and networking**
15.30	Session chaired by SIG Champion, Sami Susiaho, The Cloud - A BSkyB Company **'Standards stack for IP production'** **Peter Brightwell, Lead R&D Engineer, BBC Research & Development** Peter will cover the range of activities going on in the area of specifying how to achieve interoperability for live IP in the broadcast production media field. These include SMPTE and AES standards, AMWA NMOS specifications, and more recently efforts to provide a "full-stack" definition of what must be implemented to achieve config-free working in real systems.
15:50	Q&A
15.55	**'Live IP Implementation for the new BBC Wales Broadcast Centre in Cardiff'** **Mark Patrick, Lead Architect, BBC Design & Engineering** The BBC is building a new broadcast centre in Cardiff, Wales, which will be its first to adopt SMPTE2110 for core routing. As the detailed technical design progresses, a number of challenges have had to be resolved, in particular with regards to interoperability, PTP timing and audio. Mark's presentation will give an overview of the Live IP design for the project and how we have resolved a series of problems of integrating large-scale audio over IP where differences in thinking between TV and Radio manufacturers means that interoperability is not straightforward.
16:15	Q&A
16:20	Panel session with all speakers chaired by **SIG Champion, David Crawford, Ravensbourne University**
16:45	**Closing remarks & 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 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

Digital Catapult

Digital Catapult is the UK's leading advanced digital technology innovation Centre, driving early adoption of technologies to make UK businesses more competitive and productive and grow the country's economy. We connect large established companies, start-up and scaleup businesses and researchers to discover new ways to solve big challenges in the manufacturing and creative industries. Through this collaboration businesses are supported to develop the right technologies to solve problems, increase productivity and open up new markets faster. Digital Catapult provides physical and digital facilities for experimentation and testing that would otherwise not be accessible for smaller companies. As well as breaking down barriers to technology adoption for startups and scaleups, our work de-risks innovation for large enterprises and uncovers new commercial applications in immersive, future networks, and artificial intelligence technologies. **www.digicatapult.org.uk**

Profile of SIG Champions

Professor David Crawford, Ravensbourne University

David Crawford is a Professor at the University of Essex and at Ravensbourne in the UK, with interests in next generation networks and 'beyond HD' multimedia services. He is well-known in the engineering and business fraternities, having worked for over 40 years in the telecoms and broadcast industries and academia. David lectures on 'ICT', 'Networks' and 'Broadcast Technology', and is Director of a small high tech start-up in France. He also runs his own technical Consultancy Company, TTL, and chairs and presents regularly at technical and business conferences. David is a Member of the Royal Television Society, an ex-Board and Council Member of the Institute of Engineering & Technology (IET), and has been the Executive Producer for the annual IBC Multimedia Conference in Amsterdam for many years. **www.ravensbourne.ac.uk**

Russell Inman, Executive Product Manager, BBC Design & Engineering

Russell holds the post of Executive Product Manager, Media Networks at the BBC. He has also worked as a Senior Network Architect in the BBC's 'Technology Strategy & Architecture' division. Prior to joining the BBC, Russell was a technology consultant operating in the broadcast and wireless sectors. Prior to that, Russell was with Arqiva where he held the post of Technology Director. Previous roles have been with the BBC, Crown Castle International and National Grid Wireless. He has led teams which have developed new products and platforms in sectors such as digital TV, mobile TV, 3G and Smart Metering. At Crown Castle, he was a member of the Freeview launch team which, with the BBC and BskyB, launched this successful UK broadcast platform. Russell is a Chartered Engineer and is a Fellow Member of the Institution of Engineering and Technology. **www.bbc.co.uk**

Chris Nokes, Principal R&D Engineer, BBC Research & Development

Chris is Head of Distribution Core Technologies Section at BBC Research & Development. With over thirty years' experience in Broadcasting R&D, Chris has been involved in the development of digital television since 1994, including as a key contributor to the DVB-T2 technical study group, and editor of the DVB-T2 specification. He is also Chair of the RF Group of the UK Digital Television Group (DTG). The work of Distribution Core Technologies Section includes amongst others, projects investigating broadcasting to mobile devices including contributions to 4G/5G standardisation, massive MIMO technology and video compression. **www.bbc.co.uk**

Sami Susiaho, Head of Edge Technologies, The Cloud - A BSkyB Company
Sami Susiaho has worked for European blue chip MNOs and ISPs for the last 15 years. During the last few years, at BSKYB as the Head of Edge Technologies of the Cloud business unit, focusing on WiFi R&D and helping the business to build one of the most advanced WiFi hotspot networks in the world. He researches technologies used on the edge of the network; last mile connections, wireless and wired technologies. Sami runs the Wi-Fi test lab, sits on various industry workgroups and contributes in numerous efforts towards the best possible user experience on WiFi. **www.sky.com/wifi**

Profile of speakers

Peter Brightwell, Lead R&D Engineer, BBC Research & Development
Peter Brightwell is a Lead Engineer at BBC's R&D, where he is leading work to guide the BBC's transition to IP. Working mostly at R&D but also in other parts of the BBC, Peter has an extensive background in broadcast and technology, in particular video compression, file-based acquisition, networked delivery, and virtual graphics. He has been a frequent collaborator on international projects on metadata, media services and networked media. He has been a significant contributor to the industry's Joint Taskforce for Networked media and is currently chair of the Networked Media Incubator of the Advanced Media Workflow Association, a collaborative project that is developing the NMOS family of open specifications for networked media. **www.bbc.co.uk/rd**

Grant Hammond, Principal Consultant, dB Broadcast
Grant Hammond is a seasoned media industry consultant who has worked with many major media organisations to define and deliver complex technology transformation programmes. He holds a degree in Microelectronics and Computing (specialising in Digital Signal Processing and Artificial Neural Networks), an MBA and is a Chartered Engineer. Grant started his career as a support engineer, commissioning playout automation systems around the world for Drake Automation Limited. After forming close ties with the development team, he was soon promoted into a product management role. In 2001, Grant accepted a consulting role with Broadcast Projects International. This would lead to Grant working on a variety of ambitious programmes, including in 2002 a pan-European VOD platform rollout and around 2006 a globally distributed MAM SaaS platform. In 2008 Grant started working on Sky Studios, where he would ultimately run the Technical Design Authority and gain overall design responsibility for Broadcast Centre and Post Production. It was at Sky Studios that Grant met the dB Broadcast team. During dB Broadcast's work at Bloomberg, Grant held various roles. Initially responsible for defining the technology strategy and architecture for the live production side of the media business. He then led the architecture and delivery of one of the first major IP based broadcast facilities in the world. Grant continues to work with dB and is now focussing on leading the transition of broadcast production and presentation systems into the datacentre. Grant lives in Hertfordshire with his wife, two children and two cats. When not immersed in technology and complex programmes of work, he enjoys playing his guitars and banjo. **https://dbbroadcast.co.uk**

Pierre Maillat, Canal+
Pierre is currently responsible for technical studies and architecture for the Edition part of CANAL+. He collaborated to the design and the construction of several broadcast centers and have the chance to work for the transmission of some large sport events like Olympic games or World Cups. Today focuses ere to enhance the viewer experience, to envision new ways to produce and distribute the content migrating the broadcast process to IP and IT with special attention to the training of the teams. **www.vivendi.com/activites/canal-groupe/**

Mark Patrick CEng MIET, Lead Architect, BBC Design & Engineering
Mark Patrick joined the BBC in 2000 and specialises in broadcast infrastructure including routing, central apparatus rooms and MCRs. He has worked on multiple major BBC projects including the World Service NOC, London W1, Salford, DAB multiplex replacement and now Cardiff Central Square, where his focus is on the adoption of IP for live broadcast routing.**www.bbc.co.uk**

Peter Storey, Bloomberg
Peter Storey is Broadcast Manager at Bloomberg LP covering EMEA and Asia. He completed an HND in Marine Tele-communications at Tyneside Marine and Technical College in 1985. Peter's first job was with Raytheon Electronics for 10 years traveling the globe commissioning civil and military radar systems, then joining Bloomberg in 1995. Whilst at Bloomberg he has worked for 10 years in Network Operations and 13 years in TV Media, covering all things technical. Peter's biggest achievement was managing the media project for the new Bloomberg European HQ at Queen Victoria Street, which went live early December 2017, a 3-year project coming in 4 days early. Peter lives in Hertfordshire with his wife, 3 children and dog. **www.bloomberg.com**