

'Risk, perception, management and mitigation in RF Safety'

A joint event between

The National Register of RF Workers and Cambridge Wireless Radio Technology SIG

12th November 2024

Venue: Lloyd Suite, Edgbaston Park Hotel & Conference Centre, 53 Edgbaston Park Road, Birmingham, B15 2RS

AGENDA

11:00	Registration and networking with refreshments
11:30	Welcome & Introduction from our Chair Maria Kelly, Leonardo and Chair of the RF Register
11:35	'Management of EMF/RF Safety in Defence' Jonathan Dudley, Radiation Protection Adviser, Defence Radiation Protection Services, part of AWE The UK MOD has 250,000 people across hundreds of sites and utilises a vast array of EMF emitters. This talk provides an overview of how EMF safety is managed in the MOD taking into account the public, personnel, fuels, flammable gases and explosives.
12:00	Q&A
12:05	'EMF – A HSE perspective' Karen Fuller, HM Specialist Inspector of Health and Safety (Radiation), Health and Safety Executive
12:30	Q&A
12:35	'RF risk perception, mitigation and precaution, an overview' Sami Gabriel, Distinguished Engineer, Vodafone This session will review the origins of limits, margins in place, precaution and risk management. We will have an interactive session looking at the journey from biology to numerical modelling.
13:00	Q&A
13:05	Networking lunch
13:45	Introduction to Cambridge Wireless Brian Collins, BSC Associates and Radio Technology SIG Champion,
13:50	'UK activities in the field of EMF and Health: BioEM and COMARE' Azadeh Peyman, EMF Dosimetry Group UK Health Security Agency, BioEM President and Secretary of EMF and Health subgroup of COMARE
14:15	Q&A
14:20	'EMF Compliance Modelling Methods & Challenges' Sundar Ali, Senior Design Manager, MBNL EMF compliance modelling methods, approach and challenges faced by Mobile Operators in the UK is covered in this presentation.
14:45	Q&A
14:50	'The promises of 5G - are they fulfilled according to business and industry stakeholders in Europe and the United Kingdom?' Paige Hulls, Senior Research Associate, Bristol Medical School, University of Bristol Engaging with stakeholders to gain insight into the development, implementation and the use of 5G in Europe, and to obtain an understanding of how 5G is being used in occupational settings.
15:05	Q&A
15:15	Panel Session with all speakers, chaired by Maria Kelly, Leonardo and Chair of the RF Register
15:45	Concluding remarks
15:50	Event closes

Please note this event will operate under Chatham House Rule www.chathamhouse.org/chatham-house-rule

With the permission of the speakers, presentations will be available upon request after the event.

Profile of organiser

National Register of RF Workers

Established in 2002 the National Register of RF Workers is the only database in the world for those exposed to EMFs above the general public guideline values and is dedicated to those that work in the telecommunication, broadcast and allied industries. The Register consists of those who have the potential to be exposed above the levels recommended for the general public. The scope and scale of the database makes it unprecedented within the study of the health effects of EMF exposure.

This event is organised by Dr Ian Litchfield, University of Birmingham

Ian is a Research Fellow in the Institute of Applied Health Research, University of Birmingham, with a background in occupational medicine and interests in health service delivery. He uses qualitative and quantitative research methods in the evaluation of service delivery interventions in both primary and secondary care. Ian is currently co-lead of the [Centre of Primary Care Improvement](#)

Supported by

Cambridge Wireless - www.cambridgewireless.co.uk

Cambridge Wireless is the leading international community for companies involved in the research, development and application of wireless and mobile, internet, semiconductor and software technologies. With an active community of over 1000 technology companies ranging 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 Special Interest Groups 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 along with other high-quality industry networking events and dinners.

The CW Radio Technology Group - www.cambridgewireless.co.uk/groups/radio-technology/

The whole wireless business depends on our ability to design, build and operate large-scale radio networks, and therefore on understanding the basic science, engineering and economic realities that govern them. The Radio Technology SIG will aim to increase the awareness of the scientific and engineering limits on radio communications; and the opportunities that could be exploited to improve the state-of-the-art. It is championed by:

- Professor Mark Beach, Professor of Radio Systems Engineering, University of Bristol - www.bristol.ac.uk/engineering/research/csn/
- Brian Collins, Managing Consultant, BSC Associates - www.bscassociates.co.uk
- Paul Harris, Principal Wireless Architect, VIAVI Solutions - <https://www.viavisolutions.com>
- Peter Kibutu, 5G NTN Market lead, TTP plc - www.ttp.com
- Peter Topham, Principal Engineer, Qualcomm Technologies International - www.qualcomm.com

Profile of speakers

Jonathan Dudley, Radiation Protection Adviser, Defence Radiation Protection Services, part of AWE - www.awe.co.uk

Jon is a Radiation Protection Adviser and is the NIR Safety Technical Lead in Defence Radiation Protection Services, part of AWE. Graduating with an MPhys and MSc in Physics, Jon worked for Dstl and QinetiQ specialising in communications systems experimentation and trials from VLF to SHF. In 2012 he made the move from poacher to gamekeeper when he joined Radiation Sciences at Dstl, specialising in radiation protection. Jon provides EMF safety advice to all departments in UK MOD, is responsible for the overarching MOD policy for EMF safety and advises on derived service level policy. Day to day, he conducts radiation safety assurance visits and delivers tailored EMF safety training to the armed services.

Karen Fuller, HM Specialist Inspector of Health and Safety (Radiation) Health and Safety Executive (HSE) - www.hse.gov.uk

Karen has been working as a Specialist Inspector for HSE since February 2016. Although she works from the Leeds office, her role is national, and she frequently travels throughout the UK inspecting compliance with the Ionising Radiations Regulations 2017. Karen is HSE's operational lead for the Control of Electromagnetic Fields at Work Regulations 2016. Her role also includes regulation of artificial optical radiations. Prior to joining HSE, Karen spent

13 years as a hospital RPA and MPE for Diagnostic Radiology, as well as dealing with laser safety, in Sheffield and the surrounding hospitals. Before that, Karen was at NRPB for a couple of years, as a trainee RPA with a special interest in non-ionising radiations. Karen is a Certificated RPA, Chartered Scientist and Chartered Radiation Protection Professional.

Sami Gabriel, Distinguished Engineer, Vodafone - www.vodafone.com/uk

Sami Gabriel holds degrees in Mechanical Engineering and IT, with further research in Chemistry and BioPhysics. His work on the characterisation of the dielectric properties of biological materials, is globally used with over 15,000 citations to his work. He has been working and leading in the field of international standardisation for the assessment of RF exposure for over 25 years across several different standards organisations. Working at Vodafone, he is part of the central R&D team with primary responsibility for EMF related work as well as managing one of Vodafone’s labs, The R&D Engineering Hub. This lab is primarily for the evaluation of new technologies, the support of trials and the development of proof of concepts

Azadeh Peyman, EMF Dosimetry Group UK Health Security Agency, BioEM President and Secretary of EMF and Health subgroup of COMARE - www.gov.uk/government/organisations/uk-health-security-agency/ <https://bioem.org>

Azadeh Peyman (PhD, MBA) is an internationally known radiation protection scientist with 22 years of scientific research and provision of evidence-based advice on exposure of people to sources of electromagnetic fields (EMF) in the environment and communicating information on exposure to radiation and risk in areas of public health concern. Azadeh has a solid track record of peer reviewed publications and one of the world leading experts in dielectric properties of biological tissues; her work on ageing tissues has contributed substantially to the debate on the extent to which children’s exposure to EMF may be different from adults. Azadeh has served as a consultant for the UK’s independent Advisory Group on Non-ionising Radiation and currently is scientific secretary for the EMF and Health Subgroup of Committee on Medical Aspects of Radiation in the Environment (COMARE) and a consultant to WHO’s international EMF project. She is also the President-Elect of the BioEM society, taking the presidency role in June 2024, providing strategic leadership for bioelectromagnetic scientific community.

Sundar Ali, Senior Design Manager, MBNL - <https://mbnl.co.uk>

An experienced Chartered Engineer and Senior RF design manager leading a team of specialist engineers and with responsibility for the delivery and maintenance of a series of design, guidelines, policies, planning tools, planning process and data quality. Industry expert working collaboratively with all UK operators and regulators to drive improvements in deployment and operation of mobile networks to better manage ICNIRP RF compliance. In depth knowledge of network operator technology life cycle and significant experience of establishing and delivering data quality initiatives, process change and developing guidance to manage critical data.

Paige Hulls, Senior Research Associate, Bristol Medical School, University of Bristol -www.bristol.ac.uk

Paige Hulls is a Senior Research Associate at the University of Bristol, primarily working on GOLIAT, the European Union Horizon Programme. The aims of GOLIAT are to monitor radiofrequency electromagnetic fields (RF-EMF) exposure, particularly from 5G, provide novel insights into its potential causal health effects, and understand how exposures and risks are perceived and best communicated using citizen engagement. Paige has a background in occupational health and completed her PhD in 2022 at the University of Health on ‘the epidemiology of health and wellbeing in the workplace’. She also has multiple peer-review publications across the public health theme and alongside working on the GOLIAT project, also contributes to other NIHR public health projects at the University of Bristol.

Delegate List		
Name	Organisation	Profile
Waqas Bin Abbas	University of Bristol	
Fathi Abdeldayem	Du	
Darren Addison	UK Health Security Agency	

Sundar Ali	MBNL	MBNL is jointly owned by EE and Three, two of the UKs leading and most innovative mobile operators.
David Barker	Quintel Technology	Innovative Base Station Antenna solutions which provide multiple independently tilting beams within each band from a conventionally sized panel antenna.
Mark Beach	University of Bristol	The Communication Systems & Networks Group was formed in 1985. It performs fundamental academic research with strong levels of industrial application.
Matt Beasant	Independent	
Salman Behboudi	Ofcom	
Mick Bennett	Mitie	
Steve Bibby	Arco Professional Safety Services Ltd	
Hugo Bibby	Link Microtek	Our expertise is in radio frequency (RF), microwave and infra red components, systems and instrumentation.
Stephen Brindley	Arco Professional Safety Services Ltd	
Carolina Calderon	UK Health Security Agency	
Brian Collins	BSC Associates	Consultancy services relating to radio systems, antennas and propagation.
Paul Cowap	Cornerstone Telecommunications Infrastructure Ltd	
Roy Davies	Safety Solutions	
Andy Dawes	Laser 2000	
Steve Dawson	Arco Professional Safety Services Ltd	
Mike Denney	Arqiva	Arqiva, the communications infrastructure and media services company.
Jonathan Dudley	DSTL	
Robert Edwards	MATRIX Software	
Andreas Felekis	C&L Communications	Fibre Infrastructure, Safety, Management, and Specialised Solutions: Surveying, Auditing, Cabling, Civil works, Traffic management, Project planning, Consultancy, FTTP, MDU, 5G, Dark Fibre, B2B.
Erin Ferguson	Freshwave	Freshwave invests expertise and capital in ways that make digital infrastructure remarkably simple. Faster, less costly and in the right places.
Luke French	System C	
Karen Fuller	Health and Safety Executive	
Sami Gabriel	Vodafone	Vodafone Group Plc is one of the world's leading telecommunications groups.

Simon Gloster	MBNL	MBNL is jointly owned by EE and Three, two of the UKs leading and most innovative mobile operators.
Renato Goodfellow	Commercis	
Peter Gregg	ESBTelecoms	
Richard Hargrave	BT	Leading UK fixed line operator, ISP and telecoms supplier
Paul Harris	VIAVI Solutions	Viavi Solutions helps network operators address their toughest network, application, and service performance challenges and successfully deploy the networks of tomorrow.
Jennie Holmes	Aspen Electronics	
Paige Hulls	University of Bristol	
Abiola Ifaloye	University of Salford	
Maria Kelly	Leonardo	Leonardo is a global high-tech player in Aerospace, Defence and Security.
James Kemmitt	BAE Systems	BAE Systems helps their customers to stay a step ahead when protecting people and national security, critical infrastructure, and vital information.
Russell Kennerley	Construction Site Services Ltd	
Mike Kennett	Freshwave	Freshwave invests expertise and capital in ways that make digital infrastructure remarkably simple. Faster, less costly and in the right places.
Clare Kettle	Cambridge Wireless	The leading community for companies in wireless, internet, semiconductor and software technologies.
Peter Kibutu	TTP plc	TTP is an independent technology company where scientists and engineers collaborate to invent, design and develop new products and technologies.
Mark Kite	Cellnex Telecom	
Brian Lancaster	Projex Cellular Infrastructure	
Diji Latheef	UK Health Security Agency	
Ian Litchfield	National Register of RF Workers	The National Register of RF Workers who work in the telecommunication, broadcast and allied industries.
Richard Littlehales	SARgard Ltd	
Danie Ludick	Alphawave Mobile Network Products	
Stewart Mardle	BT	Leading UK fixed line operator, ISP and telecoms supplier
David Marsland	MBNL	MBNL is jointly owned by EE and Three, two of the UKs leading and most innovative mobile operators.
Patricia Martigne	Orange	
Jason Meredith	MBNL	MBNL is jointly owned by EE and Three, two of the UKs leading and most innovative mobile operators.

Nigel Mulcahy	MBNL	MBNL is jointly owned by EE and Three, two of the UKs leading and most innovative mobile operators.
Amanda O'Neill	BT	Leading UK fixed line operator, ISP and telecoms supplier
Gerard O'Neill	Angetech Consultants	Provider of cellular based wireless communications networks
Nicole Owen	Ofcom	Ofcom is the communications regulator. We regulate TV and radio, fixed line telecoms and mobiles, plus the airwaves over which wireless devices operate.
Andrew Palmer	CGI	CGI is a global IT and business process services provider delivering business consulting, systems integration and outsourcing services.
Jaspal Panesar	Circet Wireless	
Sam Perrins	Jet Network Solutions	
Azadeh Peyman	UK Health Security Agency	
Ranulph Poole	BBC Research & Development	
David Powell	APWireless	
Annicca Prince	Arqiva	Arqiva, the communications infrastructure and media services company.
David Ramirez	Circet	
Mohsin Raza	MBNL	MBNL is jointly owned by EE and Three, two of the UKs leading and most innovative mobile operators.
Umar Sattar	MBNL	MBNL is jointly owned by EE and Three, two of the UKs leading and most innovative mobile operators.
Stephen Simms	Leonardo	Leonardo is a global high-tech player in Aerospace, Defence and Security.
James Slater	Laser 2000 UK	Laser 2000 UK is a leading provider of cutting-edge solutions, which cover all aspects of Photonics and Telecommunication networks.
Marc Smith	Icon Tower	
Shyamalie Thilakawardana	BBC Research & Development	
Martin Thorp	BBC Research & Development	
Peter Topham	Qualcomm Technologies International	Qualcomm Technologies Inc is the world leader in next-generation mobile technologies.
Nigel Turner	Link Microtek	Our expertise is in radio frequency (RF), microwave and infra red components, systems and instrumentation.
Derek Watson	QinetiQ	
Peter Wingate-Saul	Independent	
Min Zhang	Mach One Design Ltd	Mach One Design is an engineering consultancy firm that brought together consultancy, design, and cutting edge manufacture of Electromagnetic Compatibility solutions.

