

The 13th GSMA EMF Forum Learnings from five years of 5G EMF

Event Guide

Tuesday 1 October
Brussels, Belgium

09:15-12:30 (online and in-person) and 14:00-16:00 (in-person only)

Introduction

The focus of EMF Forum 2024 is on sharing what we have learned about EMF exposures from five years of 5G.

Rapid 5G rollout

After five years, 5G has more than three times the share of connections that 4G had at the same time point. 5G is designed to support new applications through higher data speeds, faster response times and higher reliability, and a larger number of connected devices

Greater scientific clarity

The published World Health Organization (WHO) supported systematic reviews have not identified new health risks at RF-EMF exposures below the international (ICNIRP) guidelines. The WHO Task Group on Radiofrequency Fields and Health Risks will deliver policy and research recommendations to inform policymakers and other stakeholders.

International guidelines cover all radio technologies

The ICNIRP guidelines are technology neutral and cover all the radio frequencies used by mobile technologies from 2G to 5G.

According to ICNIRP the 2020 guidelines ‘protect against all potential adverse health effects relating to exposure to RF EMF, including from 5G technologies.’

Radio wave levels remain low

It was a myth that the EMF levels from 5G networks could not be measured. Tests conducted by national authorities, researchers, and the mobile industry covering all 5G frequency bands (including millimetre waves) show typical maximum levels that are less than 1% of the international public limits. Countries should adopt the latest international technical standards to ensure accurate EMF assessments for all mobile technology generations.

Effective communication is still needed

Surveys show improved knowledge of the personal benefits from 5G, and reductions in perceived risk but that overall understanding of how mobile networks operate is still relatively low. All stakeholders have a role in supporting access to credible information based on the international scientific consensus.

Noteworthy EMF developments in 2024

Latin America

Anatel updates technical requirements for human exposure to electromagnetic fields
[Anatel Brazil, January 2024]

The National Spectrum Agency updates the limits of human exposure to electromagnetic fields
[ANE Colombia, November 2023]

Europe

CCARS presented its Report on Radiofrequencies and Health 2020 – 2022
[CCARS Spain, March 2024]

Seventeenth report from SSM's Scientific Council on Electromagnetic Fields, 2022
[SSM Sweden, March 2024]

Adaptation of electromagnetic field limits
[MIMIT Italy, April 2024]

More people are positive about mobile communication and 5G
[Antenna Agency Netherlands, May 2024]

Swiss court ruling shakes thousands of 5G antennas
[20 Minutes, May 2024]

International

Mobile phone users who talk for a long time do not have an increased risk of brain tumours
[Led by Karolinska Institutet, March 2024]

Asia-Pacific

Telecommunication companies urge for alignment with international standards
[Times of India, July 2024]

WHO review finds no link between mobile phone use and brain cancer
[ARPANSA Australia, September 2024]

Agenda

09:15 Welcome and Introduction to the 13th GSMA EMF Forum

The forum brings together policymakers, international experts and industry leaders from around the world to exchange views on the latest scientific research, policy developments and the future of EMF policy harmonisation.

- Dr Jack Rowley, Senior Director, Research & Sustainability, GSMA

9:30 Science Perspective

Progress of the international Cohort Study of Mobile Phone Use and Health (COSMOS) study

- Professor Maria Feychting, Institute of Environmental Medicine, Karolinska Institute, Sweden

Progress of SEAWave within the CLUE-H research cluster

- Professor Theo Samaras, Aristotle University of Thessaloniki, Greece, coordinator of SEAWave, and member of the European Commission Scientific Committee on Health, Environmental and Emerging Risks (SCHEER)
- Facilitator: DI Manfred Ruttner, A1 Telekom Austria - Deputy Chair GSMA EMF and Health

10:30 Q&A with science speakers

- Professor Akimasa Hirata, Nagoya Institute of Technology, Japan and International Commission on Non-Ionizing Radiation Protection (ICNIRP) Chair 2024-2028
- Dr Dan Baaken, German Federal Office for Radiation Protection and ICNIRP Scientific Secretary 2024-2028
- Professor Maria Feychting, Institute of Environmental Medicine, Karolinska Institute, Sweden
- Professor Theo Samaras, Aristotle University of Thessaloniki, Greece, coordinator of SEAWave, and member of the European Commission Scientific Committee on Health, Environmental and Emerging Risks (SCHEER)
- Facilitator: DI Manfred Ruttner, A1 Telekom Austria - Deputy Chair GSMA EMF and Health

10:45 Coffee break

11:00 The World Health Organization (WHO) Task Group on Radiofrequency Fields and Health

- Dr Emilie van Deventer, Head, Radiation and Health Unit, WHO
- Facilitator: Dr Jack Rowley, GSMA

Agenda continued

11:30 The experience of five years of 5G EMF evaluations

Overview of the IEC TC106 work on base station RF-EMF assessment methods

- Dr Teruo Onishi, National Institute of Information and Communications Technology, NICT, Japan - Chair International Electrotechnical Commission (IEC) TC 106
- Christophe Grangeat, Nokia – Convenor, IEC TC106 MT 3

RF-EMF levels before and after 5G, what does it mean for the future?

- Dr Ourouk Jawad ,Radiofrequency Engineer, Market surveillance and public exposure division, ANFR, France

Evolution of RF-EMF levels in Poland following limit change and 5G launch

- Dr Lidia Stepinska-Ustasiak, T-Mobile, Poland
- The contribution of 5G small cells to RF-EMF levels
- Professor Wout Joseph, Ghent University, Belgium

Q&A session

- Facilitator: Sami Gabriel, Vodafone - Deputy Chair GSMA EMF and Health

12:30 Summary and conclusions

- Mike Wood, Telstra – Chair GSMA EMF and Health

12:45 Networking and lunch for Brussels participants

The sessions from 14:00 until 16:30 are only available in-person in Brussels.

14:00 GSMA workshop with IEC TC106 MT3 experts on 5G RF-EMF exposure assessment best practice

Welcome and introduction

- Dr Jack Rowley, Senior Director, Research & Sustainability, GSMA
- Jo Cops, IEC president
- Christophe Grangeat, Nokia – Convenor, IEC TC106 MT 3.

14:15 Base station RF-EMF exposure assessment methods standardization

Introduction to the worldwide standardization framework and basic principles of the actual maximum approach

- Christophe Grangeat, Nokia – Convenor, IEC TC106 MT 3

Agenda continued

All sessions from 14:00 until 16:30 are only available in-person in Brussels.

14:45 Practical case studies of assessing 5G base station RF-EMF levels

Real-world case studies from IEC TR 62669 describing how to assess RF-EMF exposure from 5G networks and practical implementation of the actual maximum approach

- Christophe Grangeat, Nokia – Convenor, IEC TC106 MT 3
- DI Manfred Rüttner, A1 – Contributor IEC TC106 MT 3
- Phil Knipe, Total Radiation Solutions – Contributor IEC TC106 MT 3
- Laurent Derousseau, Wavecontrol – Contributor IEC TC106 MT3

15:30 Coffee Break

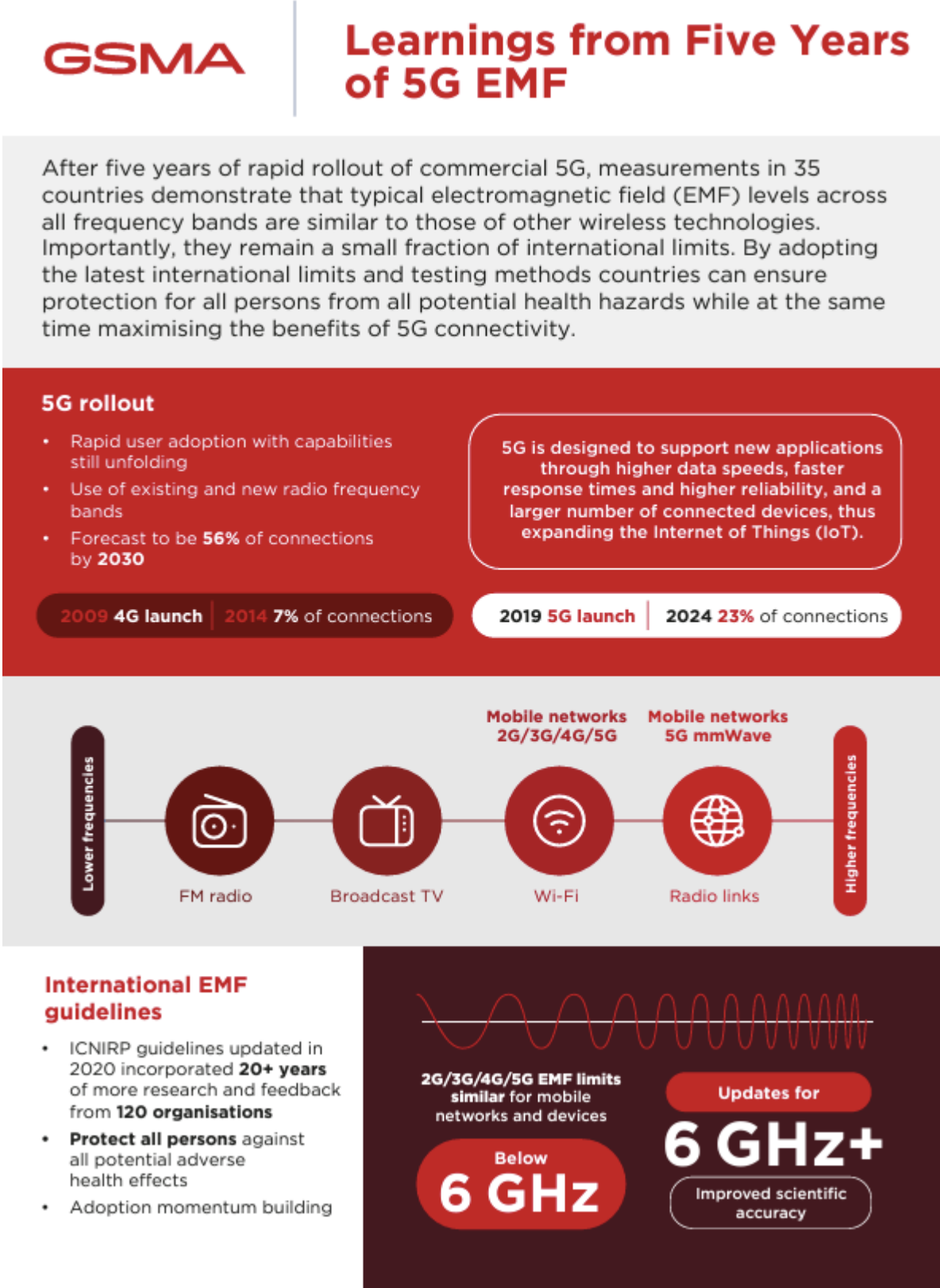
15:45 Practical demonstration of measuring RF-EMF levels on a 5G base station

Conducting live in-situ RF-EMF measurements of 5G networks using equipment installed near the meeting place and free exchange with IEC TC106 MT3 experts.

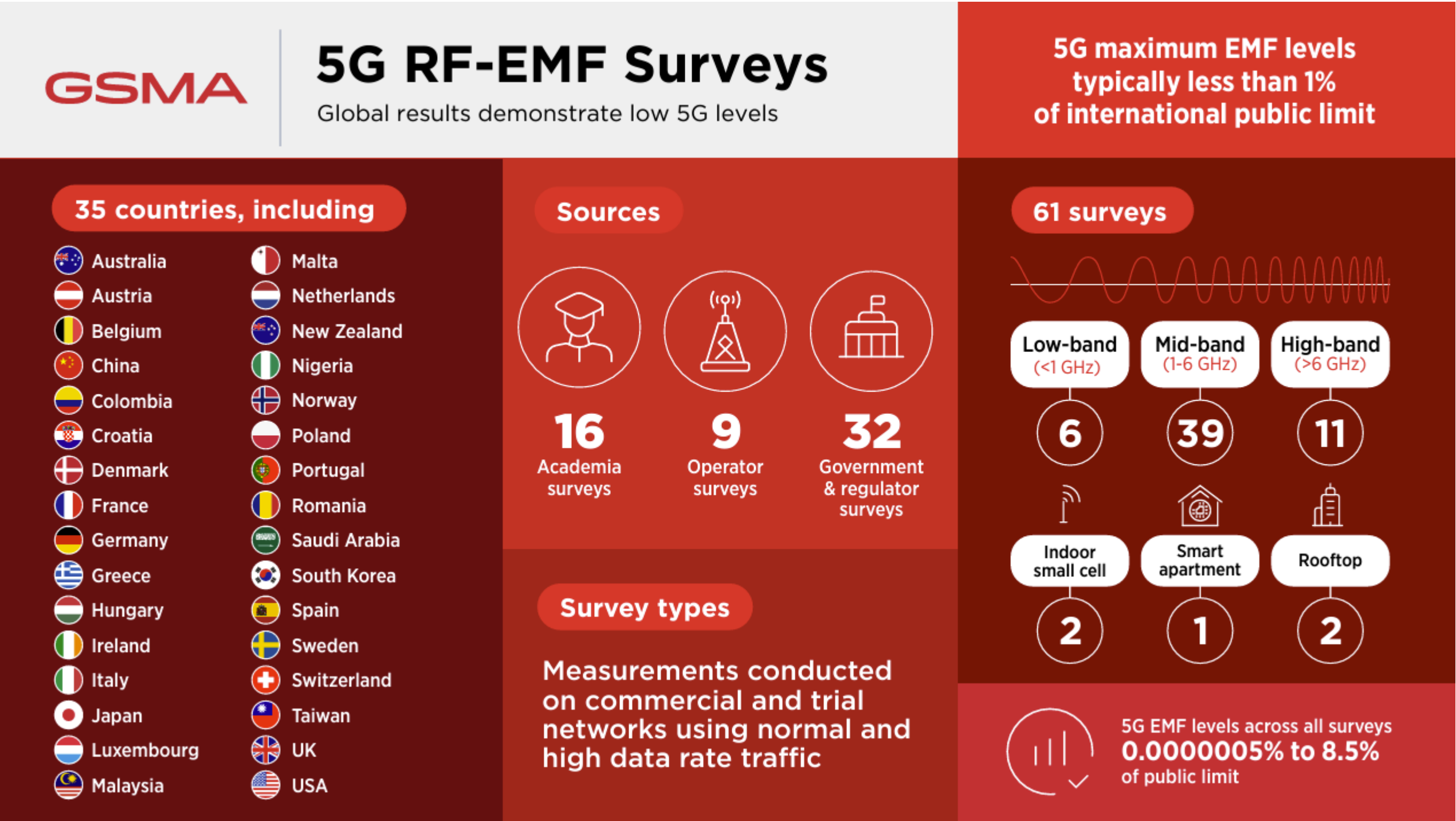
16:20 Wrap-up of the day

- Christophe Grangeat, Nokia – Convenor, IEC TC106 MT 3
- Dr Jack Rowley, Senior Director, Research & Sustainability, GSMA

Focus on five years of 5G EMF and EMF surveys



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Meet our speakers



Dr Akimasa Hirata
Nagoya Institute of Technology, Japan and International Commission on Non-Ionizing Radiation Protection (ICNIRP) Chair 2024-2028

Akimasa Hirata received his B.E. and Ph.D. degrees in communications engineering from Osaka University, Suita, Japan, in 1996 and 2000, respectively. He is currently full professor and director of research center at Nagoya Institute of Technology, Japan. His research interests are in computational dosimetry for electromagnetic fields (from extremely low frequency to millimeter waves), risk management of heat-related illness, and medical application of electromagnetic fields. Dr. Hirata won several awards including Japan Academy Medal (2018). He is a Fellow of IEEE and Institute of Physics, IEICE and IEEE Japan. Akimasa Hirata joined the ICNIRP Main Commission in May 2016 and elected as Chair 2024-2028 (from July 2024).



Christophe Grangeat
EMF Mitigation Lead and Principal System Architect, Nokia

Christophe Grangeat is Nokia EMF mitigation lead and principal system architect. He is coordinating EMF activities related to products and features, research and development, validation tests, compliance, and standardization. He is also supporting energy efficiency improvement programs. He has contributed to multiple European and national research programs. He is actively contributing to international standardization bodies such as the IEC, ITU, CENELEC and ETSI. He is the convenor of IEC TC106 MT3 working group specifying RF exposure assessment methods for base stations. He received the IEC 1906 Award in 2019 for his contribution to the standardization of RF exposure assessment methods of 5G base stations.

Meet our speakers



Dr Dan Baaken
German Federal Office for Radiation Protection and ICNIRP Scientific Secretary
2024-2028

Dr Dan Baaken is a Scientific Officer at the Competence Center EMF of the Federal Office for Radiation Protection (BfS) in German and was appointed as new ICNIRP Scientific Secretary 2024-2028. Dan earned his B.A. in Public Health and Communication and Media Studies and holds a M.Sc. in Epidemiology. His PhD in Epidemiology focused on cardiac late effects in female breast cancer patients receiving modern 3-D conformal radiotherapy. Besides that, he also published on late effects of childhood cancer, had a research stay at the International Agency for Research on Cancer (IARC), and is currently working in a number of different international projects on non-ionizing radiation including a systematic review and meta-analysis for WHO on radiofrequency magnetic fields and cancer, and a Horizon Europe project on 5G.



Dr Emilie van Deventer
EMF Mitigation Lead and Principal System Architect, Nokia

Dr Emilie van Deventer is the Head of the Radiation and Health Unit in the Department of Environment, Climate Change and Health at the World Health Organization headquarters in Geneva, Switzerland. This Unit covers public health aspects of ionizing and non-ionizing radiation safety and provides information and guidance to national authorities on radiation protection and health. She is responsible, inter alia, for topics related to electromagnetic fields, optical radiation and radon. Before joining WHO in 2000, she was a tenured professor of Electrical and Computer Engineering at the University of Toronto, Canada. She holds a PhD from the University of Michigan, USA and an honorary doctorate (doctor honoris causa) from the University of San Marcos, Lima, Peru.

Meet our speakers



Dr Lidia Stępińska-Ustasiak
T-Mobile, Poland

Public policy and public affairs professional with 20 years of experience gained in the telecommunications sector, public administration (NRA), and academia. Member of the Group on Capacity Building Initiatives at ITU. Member of Economic Forum TIME program committee.

Researcher and public policy analyst focused on digitization, the social impact of technology, digital skills, and the implications of ICT for human and institutional capacity building. Lecturer on human rights in technology. Co-author of reports and author of publications on human-technology relations.



DI Manfred Ruttner
Head of EMF & Special Complaints, A1 Telekom Austria – Deputy Chair GSMA EMF and Health

DI Manfred Ruttner has been active in the EMF topic since 2001 and is responsible for all aspects of EMF/EMC related to network and devices at A1 Telekom Austria AG. He is a court certified expert for EMF in communication technology. He contributes to working groups of the Austrian national standardization body TSK-EMV-EMF, WG1 TC106x of CENELEC and MT3 TC106 of IEC.

Since May 2023, he is also Deputy Chair Europe of the GSMA EMF and Health working group.

Meet our speakers



Prof Maria Feychting
Institute of Environmental Medicine, Karolinska Institute, Sweden

Maria Feychting is Professor of Epidemiology at Karolinska Institutet, Institute of Environmental Medicine, Stockholm, Sweden, and Head of the Unit of Epidemiology. Her research is focused on risk factors for chronic diseases, primarily cancer. She has a specific interest in childhood cancer and adult brain tumors, both in terms of risk factors such as environmental and genetic factors, and factors affecting survival. She has conducted research on potential health effects of non-ionizing radiation since the late 1980s, and she is the PI for the Swedish parts of the COSMOS study, the Cefalo study, the Sotan study and the Interphone study. She has published ~ 350 original articles, brief communications, review articles, editorials, letters, and book chapters, with ~ 280 listed in PubMed. She has been invited expert in several national and international health risk assessment expert groups. She was member of the International Commission on Non-Ionizing Radiation Protection (ICNIRP) during 2008 to 2020 and vice chairman 2012-2020. ICNIRP is an independent body suggesting science-based guidelines for non-ionizing radiation protection, which are used by many countries.



Mike Wood
Distinguished Professional, Telstra and Chair GSMA EMF and Health Group

Mike Wood is a Distinguished Professional with Telstra and Principle for Telstra's Electromagnetic Energy (EME) Strategy, Governance and Risk Management program. Mike graduated from RMIT and has over 30 years' experience in mobile network deployment, EME and community consultation and leads Telstra's 5G EME program.

Mike is Chair of the GSMA EMF and Health group and is currently Senior Vice Chair of the International Electrotechnical Commission Technical Committee 106 which has global responsibility for EME testing standards for mobile phones, devices, wireless networks and radio communications systems including 5G.

Meet our speakers



Dr Ourouk Jawad

Radiofrequency Engineer, Market surveillance and public exposure division, ANRF France

Dr Jawad is a Radiofrequency Engineer in the market surveillance and public exposure division of ANRF. He carries out statistical studies on public exposure to EMF in France.



Sami Gabriel

Distinguished Engineer, Vodafone Group – Deputy Chair GSMA EMF and Health

Sami Gabriel has worked in the field of EMF and specifically SAR measurement and evaluation for over 25 years, having designed the SAM phantom used for all SAR evaluations today, both experimentally and numerically.

He continues to be heavily involved in EMF standards as co-chair of multiple IEC standards groups and actively involved in CENELEC. Alongside this he supports the broad Vodafone Group footprint of Network Operators around the world with policy and implementation advice.

Meet our speakers



Dr Teruo Onishi
National Institute of Information and Communications Technology, NICT, Japan -
Chair International Electrotechnical Commission (IEC) TC 106

Dr Teruo Onishi became Chair of IEC TC 106 in May 2024 and his initial tenure runs to the end of May 2030. Dr Onishi is currently a Research manager at the EMC Laboratory of the National Institute of Information and Communications Technology (NICT) in Tokyo, Japan. Prior to that, he held several positions in various telecoms companies, including Nippon Ericsson and NTT DOCOMO. He has been involved in national and international standardization activities for over 20 years, dealing with exposure assessment for mobile phones and wireless power transfer. The IEC rewarded him with the 1906 Award in 2017. He has also lectured as a visiting professor at the Tohoku University and the Nagoya Institute of Technology. He has published over 40 reviewed papers.



Prof Theodoros Samaras
Aristotle University of Thessaloniki, Member EU SCHEER

Prof Theodoros Samaras is a Medical Physicist, by training. He specialises in the safety and medical applications of electromagnetic fields, working mainly with exposure assessment and dosimetry. He is currently a Professor of Applied Electromagnetics and Bioelectromagnetics at the Aristotle University of Thessaloniki and an Affiliate Professor at the University of Malta. He has co-authored several papers and served as a reviewer for various journals and funding organizations.

He is currently member of the European Commission's Scientific Committee on Health, Environment

Meet our speakers



Prof Wout Joseph
Ghent University, Belgium

Wout Joseph is professor in the domain of Experimental Characterization of wireless communication systems. He is IMEC Principal Investigator since 2017. His professional interests are electromagnetic field exposure assessment, in-body electromagnetic field modelling, electromagnetic medical applications, propagation for wireless communication systems, IoT, antennas and calibration. Furthermore, he specializes in wireless performance analysis and Quality of Experience. More info at: <https://www.waves.intec.ugent.be/members/wout-joseph>



Dr Jack Rowley
Senior Director Research & Sustainability, GSMA

Jack Rowley, Ph.D works in the Advocacy Department of the GSMA where he is responsible for technical and policy activities related to the safety of mobile communications. Jack contributes to national and international EMF and environmental working groups. He has more than 30 years of experience in the telecommunications industry and joined the GSMA in 2000. He graduated from the University of Limerick (Ireland) and his PhD is from RMIT (Australia). He is a senior member of the IEEE and member of the BioEM society.