

# Workshop on Sustainable and Sustainability-Enabling 6G

## Workshop Organizing committee



**Albert Banchs** (University Carlos III of Madrid, Spain, [banchs@it.uc3m.es](mailto:banchs@it.uc3m.es)) received his Telecommunications Engineering degree from UPC Barcelona Tech, Spain, in 1997, and the PhD degree from the same university in 2002. He was a visitor researcher at ICSI, Berkeley, CA, in 1997, worked for Telefonica I+D, Spain, in 1998, and for the Network Laboratories of NEC Europe Ltd., Germany, from 1998 to 2003. Since 2003, he is with University Carlos III of Madrid. Since 2009, he also has a double affiliation with the IMDEA Networks research institute, where he is currently the institute's director. Dr. Banchs authors more than 150 conference and journal papers, has been editor for IEEE/ACM Transactions on Networking, IEEE Transactions on Wireless Communications (2014-2019), the Green Networking and Communication Series of IEEE JSAC (2015-2016), Computer Communications (2010-2014) and IEEE Communications Letters (2005-2012) and has served in many conference TPCs. He is the inventor of 9 patents and authors a number of standardization proposals at the IETF and the IEEE.



**Liesbet Van der Perre** (KU Leuven, Belgium, [liesbet.vanderperre@kuleuven.be](mailto:liesbet.vanderperre@kuleuven.be)) is Professor at the department of Electrical Engineering at the KU Leuven in Belgium and a guest Professor at the university of Lund, Sweden. Dr. Van der Perre was with the nano-electronics research institute imec in Belgium from 1997 till 2015. Prof. L. Van der Perre's main research interests are in wireless communication and embedded connected systems, with a focus on sustainable solutions. She has (co-)authored over 400 scientific papers and 4 books. She was the scientific coordinator of the European H2020 REINDEER project and currently takes up this role for the Horizon Europe SNS-6GTandem project. She has co-organized workshops and tutorials at IEEE main conferences, including ICC, Globecom, and Sensors. As an example this includes the successful series 'Workshop On Synergies Of Communication, Localization, And Sensing Towards 6G' at IEEE ICC (2022, 2023, 2024, 2025).



**Mattia Merluzzi** (CEA-Leti, France, [mattia.merluzzi@cea.fr](mailto:mattia.merluzzi@cea.fr)) received the Ph.D. degree in Information and Communication Technologies from Sapienza University of Rome, Italy, in 2021. He is currently a research engineer at CEA-Leti, France, where he is involved in the research activities on 6G. He has organized special sessions at IEEE ICASSP and IEEE SPAWC, and served as TPC member in several international conferences. He is currently participating in the SNS 6G-GOALS project, and he is the principal investigator for CEA in SUSTAIN-6G, the European lighthouse project on 6G and sustainability. His primary research interests are in beyond 5G systems, stochastic network optimization, and edge artificial intelligence. He was recipient of the 2021 GTTI Best Ph.D. Thesis Award.



**Ali Balador** (Ericsson Research, Sweden, [ali.balador@ericsson.com](mailto:ali.balador@ericsson.com)) graduated in computer science at the Polytechnic University of Valencia, where he also achieved his PhD on the topic of wireless communication for vehicular environments in 2016. He held the role of Assistant Professor at Mälardalen University for 5 years. Ali has a background in a number of industries, such as automotive, railway, healthcare, and manufacturing but has spent most of his time focusing on the automotive sector, working in research and development projects where he acted as main technical coordinator or WP leader. In April 2022, he joined Ericsson Research in Sweden in the role of senior researcher and project manager. His own personal research interests include wireless networks, distributed systems, cloud and edge computing, and security & privacy. Ali was the chair of several workshops such as TC-CPS 2018 and part of the Technical Program Committee in many conferences and workshops such as VTC, VENITS workshop.



**Anastasius Gavras** (Eurescom GmbH, [gavras@eurescom.eu](mailto:gavras@eurescom.eu)) has more than 30 years of professional experience in academic and industry research. He joined Eurescom, the leading organization for managing collaborative R&D in telecommunications, 25 years ago as programme manager, focusing on the areas of management of networks & systems, security and middleware. His current interests are large scale testbeds for beyond 5G and 6G experimentation. He is vice-chair of the SNS JU steering board and involved in several running projects. He is editor of several SNS JU and 6G-IA community white papers as well as contributor to the work of several work groups in SNS/6G (e.g., Architecture, Vision, Reliable Software Networks, Test, Measurement and KPIs Validation...). He has organized and chaired numerous workshops and conference sessions in the area.



**Bahare M. Khorsandi** (Nokia Germany, [bahare.masood\\_khorsandi@nokia.com](mailto:bahare.masood_khorsandi@nokia.com)) is a Senior Reacher Engineer at Nokia Strategy and Technology based in Munich Germany. She received her Ph.D. and M.Sc. in Telecommunication Engineering from the University of Bologna in 2020 and 2017 respectively. She is active in various internal and external 6G projects. Most recently, she led the work package on the E2E system aspects in the European-funded flagship project Hexa-X as well as leading the project 6G standardisation activities in Hexa-X-II. She is currently leading Nokia activities in sub-networks topics in BMBF lighthouse project 6G-ANNA. Her current research focus is network architecture, sustainability, and network automation. She leads the Women in Telecommunication and Research WG, promoting gender diversity and equality in 6G-IA and SNS-JU ecosystem to increase women participation in 6G R&I. This includes dissemination of the work in international workshops /webinars e.g., WiTaR special session series in EuCNC.



**Olivier Bouchet** (Orange Labs, [olivier.bouchet@orange.com](mailto:olivier.bouchet@orange.com)) received the Licence Es Physical Science and the Telecommunication Engineer Diploma in 1987 from University of Rennes and 1989 from ISTIA of Angers, respectively. He joined Orange Labs in 1998. His current research interests are in the field of optical wireless communications. He is author of 5 books, around 60 papers or oral communications and holds 18 patents. He was FP7 OMEGA Work package leader on Optical Wireless communication, Celtic Plus ACEMIND and H2020 WORTECS leader. He is the technical manager of SUSTAIN-6G.



**Christoph Schmelz** (Nokia Germany, [christoph.schmelz@nokia.com](mailto:christoph.schmelz@nokia.com)) is a Principal Research lead at Nokia in Munich, Germany. He received his M.Sc. from Technical University Munich and held various R&D positions at Siemens and Nokia, with a focus on network management automation, mobile network architecture and sustainability. He was coordinator of the EU FP7 project 5G-MoNArch and is coordinator of the EU Horizon Europe Lighthouse project SUSTAIN-6G. Christoph co-organised multiple conference workshops in the past, in particular the IWSON series on self-organising networks hosted at VTC, PIMRC, ISWCS and WCNC conferences from 2011 to 2018, and furthermore numerous project workshops in the context of EU projects SEMAFOUR, 5G-MoNArch and SUSTAIN-6G between 2013 and 2025.

### **Scope and topics of the workshop**

Sustainability is one of the most urgent contemporary challenges. The actions towards this global objective orbit around three pillars: *societal, environmental, and economic sustainability*. These pillars require a holistic approach able to assess, jointly, positive and negative impacts of every decision. Wireless technology innovation (e.g., towards 6G) is not dispensed from these challenges. In fact, 6G should be both a potential enabler of sustainability in other sectors (*6G for Sustainable Applications*), and a sustainable technology itself (*Sustainable 6G*). To reach this objective, sustainability must be integrated at the very beginning of the design phase and across the full lifecycle.

Beyond previous initiatives, this workshop advocates for a broader approach to sustainability that goes beyond energy efficiency, considering other aspects related to environmental sustainability, and addresses the other two sustainability pillars, namely societal and economic sustainability. The scope of the workshop encompasses both foundational research and applied innovations across diverse verticals such as smart agriculture, energy systems, healthcare, mobility, logistics and many others. It invites contributions that demonstrate how 6G can be leveraged to reduce environmental footprint (i.e., negative effects), enhance digital inclusion, and foster resilient infrastructures, but also show innovations that can make 6G a sustainable technology. Special emphasis will be placed on interdisciplinary collaborations that integrate technological advancements with ethical, regulatory, and socio-economic considerations.

The workshop aims to bring together researchers, industry experts, policymakers, and societal stakeholders to explore the transformative potential of 6G technologies in advancing environmental, societal, and economic sustainability, but also to make 6G a sustainable technology. As next-generation networks evolve, it is imperative to embed sustainability at the core of their design, deployment, and application. This workshop will serve as a platform to discuss innovative approaches, share best practices, and co-create actionable strategies that align with broader visions of sustainability, from different world region perspectives.

Topics of interest include, but are not limited to:

- Sustainability pillars and their integration into 6G
  - o Environmental sustainability
    - Carbon footprint reduction strategies in 6G deployment
    - Sustainable ICT metrics and indicators for 6G networks
    - Climate-resilient network design
    - Environmental impact of computing from design to usage and orchestration
  - o Societal sustainability
    - Digital inclusion and accessibility in 6G

- Ethical AI and data governance in 6G systems
  - Human-centric design, social value creation and acceptability
  - Privacy, security, trust, and transparency in sustainable 6G applications
- Economic sustainability
  - Business models for sustainable 6G innovation
  - Cost-benefit analysis of sustainable 6G technologies
- 6G technologies & sustainability alignment
  - Sustainable architecture and design principles for 6G networks
  - Lifecycle assessment and circular economy models for 6G infrastructure
  - Sustainability indicators, metrics, evaluation and benchmarking
  - Strategic roadmaps and policy recommendations
  - Responsible AI in communications
  - Sustainable computing: usage, design, lifecycle
- Application use cases with sustainability impact
  - Smart agriculture powered by 6G: precision farming, water management
  - Sustainable energy systems: smart grids, demand-response, and 6G-enabled renewables
  - e-Health and telemedicine: reducing first order effects of healthcare through 6G
  - Mobility and transport: 6G for low-emission logistics and autonomous systems
  - Interconnection between 6G and vertical systems

### **Relevance of the topic**

As global efforts to develop and standardize 6G accelerate, the decisions we make today will shape its future impact on society, the environment, and the economy. To avoid repeating the environmental and ethical shortcomings of past network generations, sustainability must be built into 6G from the very beginning (i.e., from its design phase). Telecommunications already consume vast amounts of energy and generate significant e-waste. With data traffic and connected devices growing rapidly, the environmental footprint of the sector is set to increase. Designing 6G with energy efficiency and circular economy principles is essential to meet climate targets and support global initiatives like the EU Green Deal and the UN Sustainable Development Goals. However, this is not enough. 6G has the potential to transform key sectors such as healthcare, education, mobility, and public services through ultra-reliable, low-latency connectivity. But if not designed inclusively, it could widen existing digital divides. A sustainability-first approach should ensure that 6G benefits all communities and promotes fair access to digital opportunities. Finally, 6G can drive innovation in green industries, lower operational costs, and open new markets for responsible technologies. With growing demand for ESG-compliant solutions, sustainability is no longer optional—it is a strategic priority for the telecom sector.

### **How does the workshop differ from others, i.e., related workshops and conferences of this topic?**

Several workshops and tracks have been proposed in the last decade, with special focus on green networking. Although these initiatives succeeded in raising awareness and advancing technical solutions towards network sobriety, they mainly focus on narrow aspects related to energy efficiency and energy consumption. Also, they generally focus on networks, and not on upcoming 6G technologies, whose sustainability by design is still possible to be integrated. With this workshop we aim to broaden the focus towards including the three pillars of sustainability (environmental, societal and economic) with an approach that covers the whole lifecycle of technologies and use cases. In view of complementing this aspect, the fundamental challenges (but also opportunity) of interconnecting communication and vertical systems (e.g., how 6G can help other sectors to be sustainable) represent a unique feature of this workshop with respect to past initiatives and the scope of IEEE ICC 2026 tracks. Only by considering this interconnection and interaction, the holistic approach can be implemented at its best, towards networks that are sustainable by design, and that in turn enable sustainable applications.

Finally, already confirmed keynote speakers and panelists from different world regions will help enriching the dialogue on how the sustainability is treated by different stakeholders and how geographical and cultural aspects change views and approaches to this complex topic. Indeed, the panel will involve researchers and industry players from different world regions to share their complementary views on environmental, economic and societal sustainability needs and challenges.

### **Planned format of the workshop and preferred day**

This is planned to be a full day workshop, with 8 refereed papers, two keynotes from academia and industry (**already confirmed**), and one panel discussion to close the workshop. The panelists, from academia and industry, have diverse expertise across sustainability needs, economic, environmental and societal pillars, but they also belong to different geographical regions. A tentative schedule is reported in the next table. Of course, exact times will be aligned with the final conference schedule (e.g., coffee breaks etc.). The preferred day is the first day of the conference 24/05/2026.

Morning session	
09:00-09:10	Opening session
09:10-09:50	Keynote 1: <i>Title to be confirmed</i> Prof. Norman Franchi, University of Erlangen-Nuremberg
09:50-10:10	Paper no. 1
10:10-10:30	Paper no. 2
10:30-11:00	Coffee break
11:00-11:40	Keynote 2: <i>Technology challenges and key drivers for Sustainable 6G by Design</i> Christoph Schmelz, Principal Research lead at Nokia in Munich, Germany
11:40-12:00	Paper no. 3
12:00-12:20	Paper no. 4
Conference lunch	
Afternoon session	
14:00-14:20	Paper no. 5
14:20-14:40	Paper no. 6
14:40-15:00	Paper no. 7
15:00-15:20	Paper no. 8
15:30-16:00	Coffee break
16:00-17:20	<b>Panel with industrial and academic actors</b> <i>Sustainability in 6G across pillars and world regions</i> Moderator: <b>Prof. Liesbet Van Der Perre</b> , KU Leuven, Belgium Panelists (confirmed): <b>Christoph Schmelz</b> , Nokia Germany, <b>Prof. Norman Franchi</b> , University of Erlangen-Nuremberg, <b>Julie Bradford</b> , Real Wireless, <b>Marja Matinmikko-Blue</b> , University of Oulu, <b>Prof. Seong-Lyun Kim</b> , Yonsei University
17:20-17:30	Closing the workshop

- **Invited keynote speakers:**

- **Keynote Speaker 1 (confirmed)**

- Prof. Norman Franchi  
Chair of Smart Electronics and Systems  
University of Erlangen-Nuremberg

- **Keynote Speaker 2 (confirmed)**

- Christoph Schmelz  
Principal Research lead  
Nokia Germany, Munich

- **Technical Program Chairs**

- Albert Banchs, Universidad Carlos III of Madrid, Spain
  - Liesbet Van der Perre, KU Leuven, Belgium
  - Mattia Merluzzi, CEA-Leti, Grenoble, France

- **Technical Program Committee (TBC)**

**Leonardo Lo Schiavo**, Universidad Carlos III of Madrid, **Paolo Di Lorenzo**, Sapienza University of Rome, **Marja Matinmikko-Blue**, University of Oulu, **Nandana Rajatheva**, University of Oulu **Gilles Callebaut**, KU Leuven, **Chesney Buyle**, KU Leuven, **François Rottenberg**, KU Leuven **Anne-Cecile Orgerie**, University of Rennes, **Panagiotis Demestichas**, University of Piraeus, **Chaima Ghribi**, Nokia Standards, **Serge Bories**, CEA-Leti, **Emma Complido**, CEA-Leti, **Daniel Hauer**, Siemens, **Kim Schindhelm**, Siemens, **Rafaela Scaciota**, CEA-Leti; **Sokratis Barmponakis**, WINGS ICT Solutions, **Mitliadis C. Filippou**, WINS ICT Solutions, **Andrea Di Giglio**, Telecom Italia, **Olivier Bouchet**, Orange Labs, **Marie-Helen Hamon**, Orange Labs, **Azeddine Gati**, Orange Labs, **Estaban Selva**, Orange Labs

### **Publicity and promotion plan**

The organization of this workshop is supported by the European SUSTAIN-6G, which involves 24 partners from industry to academia. As such, the call for papers will be promoted not only through the organizers' social media channels, but also via the official profiles of the sponsoring project, ensuring broad visibility within the international research community. In addition, the workshop organizers, keynote speakers and panelists are actively engaged in international collaborative projects (e.g., Smart Networks and Services in Europe), standardization bodies, and scientific groups at both national and global levels, working closely with academic and industrial partners worldwide. This enables direct and proactive dissemination of the call for papers through relevant mailing lists. Further, the SUSTAIN-6G website (<https://sustain-6g.eu/>, 300+ visits per month) will support the promotion, providing details about keynote speakers, panel discussions, and participants. The website will be updated upon acceptance of the workshop with a dedicated page.

**A draft call for papers for the workshop follows, to be refined upon acceptance of the workshop.**



IEEE ICC

IEEE International Conference on Communications  
24-28 May 2026 // Glasgow, Scotland, UK  
Connected World for Sustainable Future

## Call for papers International workshop on



## Sustainable and Sustainability-Enabling 6G

In conjunction with IEEE ICC 2026, 24-28 May 2026, Glasgow, Scotland, UK

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### Important dates

Papers submission: TBD  
Acceptance notification: TBD  
Camera ready: TBD  
Workshop: TBD

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- Albert Banchs, University Carlos III of Madrid
- Liesbet Van Der Perre, KU Leuven
- Ali Balador, Ericsson Research
- Anastasius Gravas, Eurescom
- Bahare M. Khorsandi, Nokia Germany
- Mattia Merluzzi, CEA-Leti
- Olivier Bouchet, Orange Labs
- Christoph Schmelz, Nokia Germany

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- Nandana Rajatheva, University of Oulu
- Gilles Callebaut, KU Leuven
- Chesney Buyle, KU Leuven
- François Rottenberg, KU Leuven
- Anne-Cecile Orgerie, University of Rennes
- Panagiotis Demestichas, University of Piraeus
- Chaima Ghribi, Nokia Standards
- Serge Bories, CEA-Leti
- Emma Complido, CEA-Leti
- Daniel Hauer, Siemens
- Kim Schindhelm, Siemens
- Rafaela Scaciota, CEA-Leti
- Sokratis Barmounakis, WINGS ICT Solutions
- Mitliadis C. Filippou, WINS ICT Solutions
- Andrea Di Giglio, Telecom Italia
- Olivier Bouchet, Orange Labs
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- Estaban Selva, Orange Labs

Visit the workshop webpage at: (website to be built upon acceptance)