



Alliance for IoT
and Edge Computing
Innovation








Session Use cases to apply the methodologies for CO2 reduction measurements

Moderator: Sylvie Couronné, Fraunhofer IIS, AIOTI Co-Chair of WG ICT for CO2 reduction Methodology

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Moderator and Panelists

Moderator	Photo	Bio
Sylvie Couronné, Fraunhofer IIS		<p>Sylvie Couronné graduated in Electrical Engineering – High Frequency Technologies– in Paris and Palo Alto (Stanford University). She’s today working in the Positioning and Networks Division of Fraunhofer Institute for Integrated Circuits (Fraunhofer IIS), Germany.</p> <p>She previously led the development and implementation of RF ICs for digital broadcasting and satellite navigation applications.</p> <p>Her activities centered then on the development of new concepts and specifications of embedded localization systems to support the implementation of context aware services for different applications like Industrial IoT.</p> <p>Since few years, her core research work is focused on resource efficient ICT (GreenICT) and sustainability issues of ICT technologies as on future mobile communication 6G.</p> <p>Moreover, she has the role of Research Manager as IP Manager in the Division Locating and Communication of Fraunhofer IIS.</p> <p>Since 2019 she’s an active member of the AIOTI and since 2024 she’s also serving as co-chair of the AIOTI ICM group.</p>
Speaker	Photo	Bio
Georgios Karagiannis, Huawei		<p>dr. ir. Georgios Karagiannis holds a Ph.D. degree and a M.Sc. degree in Electrical Engineering from the University of Twente, the Netherlands. From 1994 to 1998 he was working as a Researcher at the University of Twente. In 1998 he joined the Wireless Multimedia Research unit of Ericsson Eurolab Netherlands in Enschede, Netherlands, where he stayed until April 2003. From April 2003 to August 2014 he worked as Assistant Professor at the Design and Analysis of Communication Systems (DACs) group of the University of Twente. In September 2014 he joined Huawei Technologies Düsseldorf GmbH as Principal Strategist in Standardization and Industry Development. He participated in several EU funded and Dutch National projects, where currently participating in the HEU COMMECT project. Furthermore, he was technical steering and technical program committee member in a number of international conferences, including IEEE conferences. He participated in several SDOs and alliances, such as AIOTI, IETF, BBF, ETSI ITU-T and OSGi Alliance. Within (1) the AIOTI he serves as the chair of the AIOTI WG ICM and co-chair of AIOTI WG standardisation and served as the AIOTI Steering Board Chair in 2020, (2) the European Observatory StandICT.eu as chair of TWG IoT and Edge, (3) the OSGi Alliance he held a position as alternate member of the Board of Directors until November 2018, (4) the BBF, he held editing positions in the context of Cloud Central Office (CloudCO) and 5G Fixed Mobile Convergence (FMC) activities. Recently he represented AIOTI in the SNS JU Work Programme 2021-2022 taskforce, the TransContinuum Initiative and the DEI/MSP Work Group.</p>
Rehan Raza, Fraunhofer HHI		<p>Dr. Rehan Raza did his M.Sc. degree in Electrical Engineering and Information Technology under a joint Erasmus Mundus double-degree program from Politecnico di Torino, Italy and Karlsruhe Institute of Technology, Germany. He got his Ph.D. degree in Information and Communication Technology from KTH Royal Institute of Technology, Sweden. He then joined Ericsson Sweden as a senior researcher and developer in the year 2018 where he contributed to big open-source projects in the telecom industry and led the development of several demos and proof-of-concepts. Since October 2023, he has been working in Fraunhofer Institute of Telecommunications (HHI) as a research associate. He is currently working in multiple EU-funded research projects and also acting as work-package leader in a few of them. His research interests include software defined networking (SDN), network management and orchestration, as well as network automation.</p>
Lizhen Huang, NTNU		<p>Professor Lizhen Huang is the leader of the Civil Engineering and Geomatics Group at the Department of Manufacturing and Civil Engineering, NTNU. In her multi-faceted role, Professor Huang serves on the IV faculty's innovation committee and is director for on the strategic research group "digital twin for sustainable built environment.". Over the past decade, she's been credited with 50+ high-impact journal publications, and one notable piece has achieved over 700+ citations since 2018 at Google Scholar and also cited by relevant policy reports from World Bank, IMF, etc.. She has initiated several projects, both at the EU and national levels, targeting a carbon-neutral future, with over €5 million funding to the department. Beyond research, her mentorship has shaped the careers of 10+ PhD students, 5+ post-doctoral researchers, and two emerging faculty members. She serves as scientific committee evaluator for project proposals, PhD defenses, faculty promotion and recruitments. Professor Huang' is active in collaboration network, marked by her involvement in European innovation platforms like ECTP and AIOTI. Since 2024, she is the ECTP DBE Committee Executive Board Member. During 2021-2023, she served as Chair for AIOTI Buildings and communities group.</p>
Srdan Krčo, DunavNET		<p>Srdan Krčo is an entrepreneur, innovator, and scientist. In 2005, he founded DunavNET, a company he still successfully manages. DunavNET is known for its numerous solutions for smart cities, agriculture, and industry, implemented using a range of IoT and artificial intelligence technologies. In addition to DunavNET, he founded several other software and digital transformation-focused companies. Srdjan is active in international scientific research projects, like Horizon Europe, and teaches at several universities in Europe and Africa, covering IoT, AI, entrepreneurship, and digital transformation subjects. He is a frequent speaker at conferences. Srdan authored a dozen patents and published around a hundred papers in international journals and conferences. He was awarded the Engineer-Innovator of the Year in 2007 by the Irish Institute of Engineers, received several awards from Ericsson Ireland, and has received the Microsoft MVP annual award for IoT since 2017.</p>

Scope of the session

- This session discusses IoT and/or edge computing use cases and solutions that contribute to and support the Green Transformation of vertical/industrial sectors.
- This session will focus on how the methodologies for measuring carbon emissions discussed in Session of the “Green enablement” theme are applied in IoT and/or edge computing use cases.
- Session presentations and videos can be found on the event website:
<https://aioti.eu/aioti-days-2024/>

Questions for discussion

- What challenges need to be addressed by use cases focusing on green enablement to contribute to transitioning to a future with an environmentally sustainable environment?
- What Industry associations such as AIOTI could do to stimulate the use of the standardised methodology on measuring the benefits of using ICT to reduce GHG emissions in other sectors?
- What impact would it have on your results if we assume that the network is powered by energy from different sources, e.g., with different values of emission factors?
- If someone would be interested in performing the CO2 analysis or similar investigations on your testbed, how can they collaborate with you?
- You have shown the results of the CO2 assessment in your work, but have you also considered other GHGs apart from CO2?
- How will we standardize the method for environmental impact assessment (not only CO2, consider toxicity, or other) in ICT applications?
- What will drive farmers to implement solutions contributing to CO2 reduction?
- Can farmers finance themselves implementation of the CO2 reduction solutions?