

Years of Actions on Mobile and Wireless Communications

A SPECIAL EDITION NEWSLETTER OF THE COST CA20120 INTERACT ACTION

Edited by:
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INTERACT

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EUROPEAN COOPERATION IN SCIENCE & TECHNOLOGY

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Forewords

LUIS M. CORREIA, PROF. AT IST / U. LISBON, PORTUGAL
Organizer of the 40 YAW



Casual conversations at breaks of COST Actions meetings have led to many successful ideas, collaborations and projects, and the idea of celebrating the 40 years of Actions addressing wireless communications was one more of these conversations. In fact, the community of researchers participating in INTERACT roots from the very first Action in this area, i.e., COST 207 "Digital Land Mobile Radio Communications", which started on April 1984.

The fact that this community has been capable of successfully proposing and running continuously Actions for 40 years does deserve being celebrated, not only because this is an achievement by itself, but also because it represents the capacity of researchers to establish a long-term relationship of trust and collaboration in a bottom-up approach, bringing up the best out of the concept of networking. The results of these 40 years are hard to measure (although some are very tangible), but I dare to say that many research ideas materialised into joint papers, books, co-supervised Ph.D. theses, project consortia, workshops, training courses, models, recommendations, white papers, and standards, among many other outcomes (at the European and even worldwide scales). Many developments and achievements in the area of mobile and wireless communications resulted from these Actions, namely regarding radio aspects, and propagation and channel modelling in particular. Still, more importantly, the personal relationships that have been established within this community, from students to senior researchers, is a value that cannot be measured by any metric but that has certainly impacted on the research performed in Europe.

The workshop materialising this celebration is the result of the effort and support of many people, not only from the current INTERACT Action (namely its leadership) but also from previous ones, and undoubtably including the COST Office in general and the Science Officer Ralph Stübner in particular who cherished this idea since the beginning. A big Thank You to you all. Let this be a motivation for many more Actions and research collaborations for years to come.

RONALD DE BRUIN
COST Association Director



As COST Director, it is both a privilege and an honour to reflect on the celebration of the 40th anniversary of the approval of the COST Action 207, "Digital land mobile radio-communications".

The COST Actions on mobile and wireless communications are one of the biggest success stories in the long history of COST. When COST Action 207 kicked off in 1984, no one could have imagined that its legacy would inspire researchers and innovators until this day, and that its impact and output changed the way we communicate ever since.

More specifically, it was this COST Action and its successors that laid the foundations for the GSM standard and helped shape the successor standards of modern-day mobile phone communications, a legacy that cannot be overemphasized. Due to the open spaces in which researchers, innovators and industry representatives could meet and connect, a fertile ground for engagement and interaction was created, this helping to pave the way for this success. The research community always used these COST Actions to cultivating their next generations. Therefore, many young researchers who were active in these networks, are now leading academics in the field of telecommunications. Currently, more than 500 Working Group members from Europe and beyond are active in the running COST Action INTERACT (CA20120), showcasing the relevance of the COST programme until this date. Through the various networking tools, we allow the community to engage in research coordination and capacity building activities, aiming for a tangible impact for society at large.

At COST, we are proud that for more than 50 years we have been building and nurturing these pan-European networks which provide opportunities for these groundbreaking collaborations, of which the mobile and wireless communications Actions are a textbook example. I hope that this event will be both a testimony on what has been achieved and an inspiration for the next generations of researchers and innovators to consider COST as their go-to-funding scheme in the European Research Area for building life-long lasting networks and connections

History

COST 207 - DIGITAL LAND AND MOBILE RADIO COMMUNICATIONS
1984-03 / 1988-09

Chair: M. Failli, SIP, Italy
Vice-chair: Georges de Brito, France Telecom, France
WG 1: Lorenz, Deutsche Telecom, German
WG2: Georges de Brito, France Telecom, France
WG3: Robert Swain, United Kingdom





COST 231 - EVOLUTION OF LAND MOBILE RADIO (INCLUDING PERSONAL) COMMUNICATIONS
1989-04 / 1996-04

Chair: P. Porzio Giusto, Eraldo Damosso, CSELT, Italy
Vice-chair: Georges de Brito, France Telecom, France
WG 1: P. Porzio Giusto; R. J. Goodwin, CSELT, Italy, UK
WG2: J. Bach Andersen, U. Aalborg, Denmark
WG3: Peter Watson; Stephen K. Barton, U. Leeds; U. Bradford, UK

COST 259 - WIRELESS FLEXIBLE PERSONALISED COMMUNICATIONS
1996-12 / 2000-04

Chair: Luis M. Correia, IST - U. Lisbon, Portugal
Vice-chair: Jean-Frédéric Wagen, Swisscom, Switzerland
WG 1: Stephen K. BArton, U. Bradford, United Kingdom
WG2: Ernst Bonek, Tech. Univ. Vienna, Austria
WG3: Thomas Kürner, E-Plus, Germany







COST 273 - TOWARDS MOBILE BROADBAND MULTIMEDIA COMMUNICATIONS
2001-05/ 2005-06

Chair: Luis M. Correia, IST - U. Lisbon, Portugal
Vice-chair:Per Lehne, Narcis Cardona, Telenor, U. Polytech. Valencia, Norway, Spain
WG 1: Alister Burr, U. York, United Kingdom
WG2: Ernst Bonek, Tech. Univ. Vienna, Austria
WG3: Roberto Verdone, U. Bologna, Italy

COST 2100 - TOWARDS MOBILE BROADBAND MULTIMEDIA COMMUNICATIONS
2006-12 / 2010-12

Chair: Roberto Verdone, U. Bologna, Italy
Vice-chair: Jorg Pamp, Telenor, IMST, Germany
WG 1:Alister Burr, U. York, United Kingdom
WG2: Alain Sibille, ENSTA, France
WG3: Narcis Cardona, U. Polytech. Valencia, Spain





COST IC1004 - COOPERATIVE RADIO COMMUNICATIONS FOR GREEN SMART ENVIRONMENTS
2011-05 / 2015-05

Chair: Narcis Cardona, U. Polytech. Valencia, Spain
Vice-chair: Roberto Verdone, U. Bologna, Italy
WG 1: Claude Oestges, U. Cath. Louvain, Belgium
WG2: Alister Burr, U. York, United Kingdom
WG3: Silvia Ruiz, U. Polytech. Catalonia, Spain

COST CA15104 IRACON - INCLUSIVE RADIO COMMUNICATION NETWORKS FOR 5G AND BEYOND
2016-03 / 2020-3

Chair: Claude Oestges, U. Cath. Louvain, Belgium
Vice-chair: Narcis Cardona, U. Polytech. Valencia, Spain
WG 1: S. Salous, K. Haneda, U. Durham; U. Aalto, UK, Finland
WG2: H. Bogucka, J. Skyora, U. Poznan; Tech. U. Prague, Poland, Czech Republic
WG3: S. Ruiz Boqué, H. Ahmadi, U. Polytech. Catalonia, U. College Dublin, Spain, Ireland





COST CA20120 INTERACT - INTELLIGENCE-ENABLING RADIO COMMUNICATIONS FOR SEAMLESS INCLUSIVE INTERACTIONS
2021-09/ 2025-09

Chair: Laurent Clavier, IMT Lille, France
Vice-chair:Chiara Buratti, U. Bologna, Italy
WG 1: V. Degli Esposti, M. Boban, U. Bologna; Huawei, Italy, Germany
WG2: A. Garcia Armada, Alister Burr, U. Carlos III, U. York, Spain, United Kindom
WG3: H. Ahmadi, K. Mikhaylov, U. College Dublin, U. Oulu, Ireland, Finland

Interviews with our chairmen



During the 2nd Technical meeting of the COST CA20120 INTERACT Action in June 2022 at INSA (Lyon, France), we were honoured to have all of the chairmen of the last six actions present. We took the opportunity to ask them some questions about their actions and COST experience!

LUIS M. CORREIA, PROF. AT IST / U. LISBON, PORTUGAL
Chair of COST 259 & 273



What contribution do you want your actions to be remembered for?
COST Actions 259 and 273 addressed many aspects in mobile and wireless communications, namely their radio aspects. They occurred when the development of 3G was finished (259) and the 4G one was starting (273), so key topics were directional channel models and test methods for handset antennas for the former and MIMO channel modelling and systems characterisation for the latter. As usual, these results were only possible due to the close cooperation among the colleagues participating in the Actions and actively contributing to them

What was your motivation to become chair?
At the 2nd meeting of 259, in Lisbon, the usual "pre-meeting", i.e., the meeting of the chair, vice-chair, Working Groups chairs and local organiser, faced a problem: due to illness of the chair and to the fact that a vice-chair hadn't been elected yet, the Action had no leadership. The WG chairs (Stephen Barton, Ernst Bonek and Thomas Keurner) challenged me to be the vice-chair, which I accepted, since by then I was already a strong believer and supporter of COST. Accepting this challenge meant giving back to the community a bit of the much I had already received in terms of exchange of ideas, comments of my work, and new opportunities for research arising from the many contacts, among other things.

What is your best COST memory?
COST Actions are undoubtably the best tool to improve the results of your research and to network with colleagues. The best memories that I have come from the many technical discussions I had with colleagues in an environment so open and frank that it's only possible when a friendly and trustful relationship exists with them. In addition, seeing new colleagues, especially students, start participating in every meeting is a reward that justifies the time spent dealing with the organisation of an Action and all its bureaucracy.

What about he future?
We're celebrating 40 years of Actions in mobile and wireless communications, which I dare to say it's quite an achievement for our community. My sincere wish is that this community will be capable of celebrating many more anniversaries of this kind for the next decades, renewing itself, addressing the new problems of the next generations of systems to come, and significantly contributing to the research in this area.

ROBERTO VERDONE, PROF. AT U. BOLOGNA, ITALY
Chair of COST 2100



What contribution do you want your action to be remembered for?
The COST2100 Action was developed starting in 2006. Through the realisation of the COST2100 channel model and other relevant Action-generated initiatives, it contributed to the standardisation of 4G. I wish it was remembered for that.

What was your motivation to become chair?
The former Action on mobile communications grouped together many among the experts in the field. When I accepted the role of proponent of the subsequent Action, the ambition was to guide such a distinguished set of scientists, and live this privilege.

What is your best COST memory?
Being the Chairperson of a COST Action on mobile communications that collects the interest of more than 500 researchers, more than 100 institutions, gives you the feeling to steer the future of mobile.
Nonetheless, my best COST memories are the talks in the corridors, during the breaks, with younger researchers, the PhD students making questions asking suggestions regarding their future.

What about he future?
5G and 6G are very much oriented towards verticals. This means that it is much more important than before for telecommunication researchers to network with domain-specific experts. This is at the same time a challenge, and an opportunity for COST Actions to play a role in the development of future mobile radio communications

NARCIS CARDONA, UNIV. POLYTECH. VALENCIA, SPAIN
Chair of COST IC1004



What contribution do you want your action to be remembered for?
IC1004 produced the view of our community on the essential concept, use cases, and enabling technologies of the 5G radio access networks. This work was published as a white paper at the beginning of the action, and technically detailed in the final book.

What was your motivation to become chair?
After having participated in 4 previous actions, that gave my initial career a lot of opportunities to networking and boosting my research, I felt the need of giving my experience back to the COST community.

What is your best COST memory?
I mention 2: my very 1st day in a COST meeting in 1993 and my very last one as chair. In the 1st day I was a PhD student without any support attending for the 1st time a meeting in which I knew nobody. In minutes I was integrated in the group and my work listened to as if I were a Senior Professor. That's COST spirit, and this is why I never step down from the actions. The last day being a chair, I looked what we had achieved, enrolling in the Action a record number of companies and institutions from many countries in Europe and worldwide and so I knew the efforts had been rewarding just for that.

What about he future?
I'm happy to serve, participate, contribute to any new Action in my field of research. That student in 1993 is now the leader of almost 200 researchers in iTEAM, so anything that COST requires from me, I will provide it. A recommendation for future chairs: be the most proactive of the group; it is key to make a successful action!

CLAUDE OESTGES, PROF. AT UNIV. CATHOLIQUE LOUVAIN, BELGIUM

Chair of COST CA14104 IRACON



What contribution do you want your action to be remembered for?

IRACON built upon the previous Actions to address many of the 5G ingredients, spanning the gamut from massive and distributed MIMO, millimetre wave and cooperative RAN to application scenarios. My wish would be for IRACON to be associated with 5G, not only in terms of channel modelling but also for signal processing, algorithms & protocols.

What was your motivation to become chair?

As soon as I could see that there was somehow a support from the community, proposing myself as a chair was slightly obvious. Indeed, I really considered this role as a way to give back all I had received from previous Actions in my scientific and academic career so far.

What is your best COST memory?

There are actually so many that it is not easy to single out any of them. I would say that meeting so many different people, from different countries and cultures, is definitely a collective memory that is hard to forget.

What about he future?

I wish for COST Actions to continue playing a role in the development of future mobile radio communications, especially when we face challenges that can't simply be met by continuing the business-as-usual approach that has been followed by the sector in the last decades. Slow science is required, and this is where Actions should step in, at least in my opinion.

LAURENT CLAVIER, PROF. AT IMT LILLE DOUAI, FRANCE

Chair of COST CA20120 INTERACT



What contribution do you want your action to be remembered for?

INTERACT started when 5G was launched. The main contribution I expect from this action is to provide a solid scientific basis for future networks (6G or other), leaving aside short-term or essentially economic improvements in favour of a more long-term and human-centred vision.

What was your motivation to become chair?

I did my thesis in signal processing and bio-medical engineering and I started my research activity in an environment without much expertise or experience of wireless networks. I therefore learnt most of what I know through the COST Actions in which I have been lucky enough to participate since COST 273. If I can give back a tiny part of what I have received from this community, it is with great desire and pleasure that I do so.

What is your best COST memory?

From my 1st presentation to the WG1, to my 1st question at a plenary session, to my 1st speech at a gala dinner, it's impossible for me to single out a particular moment, because these actions have seen me grow in my professional life. But what amazes is the richness of the encounters, the kindness and the resourcefulness each time I take part in a meeting.

What about he future?

When we trace the development of telecommunications networks, the pace of progress is incredible and continues to accelerate. I think the time has come to take a slightly more human approach to radio networks, and not by introducing AI or semantics. We should revise our improvement criteria for future networks based on more fundamental human needs. And then tackle beyond 6G networks!

Programme

LISBON, PORTUGAL
2024-JAN-22

09h00 / 10h20 - OPENING SESSION

Chair: Laurent Clavier (Prof. @ IMT Lille, France & Chair COST CA20120 INTERACT)

- Salvatore Grimaldi (Prof. @ Univ. Tuscia - Viterbo, Italy & President COST Association, Belgium), *Opening*
- Luis M. Correia (Prof. @ IST / Univ. Lisbon, Portugal & Chair COST 259 and 273), *A Brief History of Actions on Mobile and Wireless Communications*
- Wim Kotterman (Researcher @ Tech. Univ. Ilmenau, Germany), *Memories since COST 207*

More information on the keynotes can be found on the next pages!

10h30 / 11h00 - COFFEE BREAK

11h00 / 12h30 - KEYNOTES

Chair: Claude Oestges (Prof. @ Univ. catholique Louvain, Belgium & Chair COST CA15104 IRACON)

- Thomas Kürner (Prof. @ Tech. Univ. Braunschweig, Germany), *Propagation and Channel Modelling - Impact by 40 years of COST Actions*
- Andreas F. Molish (Prof. @ Univ. Southern California, USA), *Components for Beyond-5G Physical and Network Layers*

More information on the keynotes can be found on the next pages!

12h30 / 14h00 - LUNCH BREAK

14h00 / 15h30 - PANEL "Strengthening the telecommunications R&D sector"

Chair/Moderator: Anusha Panjwani (Head of Science Department @ COST Association, Belgium)

COST enables since 1971 the cooperation of researchers and innovation accross Europe and beyond. COST Action 207 and others helped bringing Europe into the driving seat of mobile and wireless communication. This panel will explore what led to this success, but more importantly, what would be needed by the science, technology, policy and regulatory communities to make impact in the future.

- Peter Stuckmann (Head of Unit @ European Commission, Belgium)
- Rui Munhá (Scientific Officer @ FCT, Portugal & Portugal representative @ COST Committee of Senior Officials, Belgium)
- Roberto Verdone (Prof. @ Univ. Bologna, Italy & Chair COST 2100)
- Tatiana Kováčiková (Former Head of Science Operations @ COST Assocation, Belgium & Prof. @ Univ. Zilina, Slovakia)
- Ralph Stübner (Science Officer @ COST Association, Belgium)

15h30 / 16h00 - COFFEE BREAK

15h30 / 16h00 - COFFEE BREAK

16h00 / 17h30 - PANEL "COST: Connecting Generations in Mobile Radio Communications - Shaping Future Research and Interdisciplinary Perspectives"

Chair/Moderator: Narcis Cardona (Prof. @ Univ. Polytech. Valencia, Spain & Chair COST IC1004)

The COST framework has been a driving force in propelling mobile radio communications research forward. This panel discussion is dedicated to delving how COST Actions have promoted interdisciplinary collaboration and served as a beacon for future technologies, research visions, and technical innovation. Throughout its history, COST has embraced a bottom-up approach to foster in-depth technical discussions on fresh research topics. Its open-door policy has welcomed institutions from many countries, uniting diverse perspectives and talents. COST has championed the principles of inclusivity, ensuring that every voice is heard and valued, thus, setting a high standard for other research initiatives to follow. In this panel discussion, we bring together the wisdom of seasoned experts and the fresh perspectives of emerging researchers to share their insights on future technologies and research visions. Together, we will explore the enduring impact of COST and how it continues to empower technical innovation, ignite the spirit of future technologies, and steer research visions in this ever-evolving field, all within the inimitable framework of its bottom-up research.

- Margot Deruyck (Prof. @ Univ. Ghent - IMEC, Belgium)
- Per Lehne (Senior Researcher @ Telenor, Norway)
- Sławomir J. Ambroziak (Prof. @ Gdansk Univ. Tech., Poland)
- Gordana Gardašević (Prof. @ Univ. Banja Luka, Bosnia and Herzegovina)
- Alister Burr (Prof. @ Univ. York, United Kingdom)

19h / 22h - SOCIAL DINER @ Restaurant Soho Club



OPENING SESSION

Opening

Salvatore Grimaldi, Prof., President COST Association, Belgium

Bio



Salvatore Grimadi is a Professor of hydrology at the Università degli Studi della Tuscia, Viterbo, Italy, Department for Innovation in Biological, Agro-food and Forest systems (DIBAF) and adjunt faculty of the New York University, Department of Mechanical and Aerospace Engineering, New York, USA. He graduated in hydraulic civil engineering at Sapienza Università di Roma, Italy, where, in 2001, he also got a Ph.D. in hydrology for engineering, followed by a post-doc at Masschusetts Institute of Technology, Cambridge, USA. He is the Director of the MecHydroLab 'Mechanical Egineering for Hydrology and Water Science', a multidisciplinary laboratory for environmental monitoring. His research activities focus on statistical hydrology, GIS terrain analysis, surface hydrology, new technologies for hydrological observations, citizen science in hydrology, and nature-based solution for erosion mitigation. He is author of more than 100 publications with 7000 citations and H-index = 44. He was elected in 2023 as President of the International Association of Hydrological Sciences (IAHS) for the period 2025-2029. He has also served as a reviewer for more than 120 journals (i.e., Nature, Nature Climate Change, Scientific Reports, and Science Advances) and for a variety of research institutions. He served as COST Scientific Committee member (2021-2023) and as a COST Action Review Panel Member Expert (2015-2019). He was appointed President of COST in July 2023.

A BRIEF HISTORY OF ACTIONS ON MOBILE AND WIRELESS COMMUNICATIONS

Luis M. Correia, Prof. U. Lisbon, Portugal

Bio



Luis M. Correia was born in Portugal, in 1958. He received the Ph.D. in Electrical and Computer Engineering from IST (Univ. Lisbon) in 1991, where he is currently a Professor in Telecommunications, with his wok focused on Wireless & Mobile Communications, with the research activities developed in the INESC-ID institute. He has acted as a consultant for the Portuguese telecommunications operators and regulator, besides other public and private entities, and has been in the Board of Directors of a telecommunications company. He has particpated in 33 projects within European frameworks (including COS Actions since 231), having coordinated 6 (namely COSTs 259 and 273) and taken leadership responsibilities at various levels in many others, besides national ones. He has lectured 76 advanced training courses for industry and academia at the national and international levels. He has supervised over 230 M.Sc./Ph.D. students, having edited 6 books, contribute to European strategic documents, and authored over 550 papers in international and national journals and conferences, for which served also as a reviewer, editor and board member. Internationally, he was part of 43 Ph.D. juries, and over 80 research projects and institutions evaluation committees for funding agencies in 12 countries, and the European Commission and COST. He has been a National Delegate to the COST Domain Committee on ICT. He has launched and served a Chairman of the IEEE Communications Society Portugal Chapter, besides other several duties in this society on global level. He is an Honorary Professor of the Gdańsk University of Technology (Poland) and a recipient of the 2021 EurAAP Propagation Award *"for leadership in the field of propagation for wireless and mobile communications"*

OPENING SESSION

MEMORIES SINCE COST 207

Wim Kotterman, Researcher, TU Ilmenau, Germany

Bio



Wim Kotterman received his Engineering Degree in Physics from Delft University of Technology, Delft, the Netherlands and his Ph.D. in Electrical Engineering from Aalborg University, Aalborg, Denmark, in 1984 and 2004, respectively. After a short stay in acoustic engineering, he joined Dr. Neher Labs of PTT of the Netherlands in 1987, performing mobile radio channel measurements and modelling, mainly for planning GSM radio networks. In 2000, he switched to Aalborg University, Denmark. His research topics in Aalborg were channel sounding and modelling applicable to small multi-antenna mobile radio handsets. From 2004 onwards, he is with Technical University of Ilmenau, Ilmenau, Germany, at the Institute of Information Technology. Over the years, his research topics ranged from mobile radio channel measurements and modelling, Over-the-Air testing in Virtual Electromagnetic Environments, Synthesis/Emulation of arbitrary EM wavefields, to EM-scattering by vehicles. Wim Kotterman has been participating in the COST Actions 207, 231, 259, 273, 2100, IC1004 and CA15104 IRACON. In the latter two Actions, he served as a co-chair for sub working groups on Over-the-Air testing. At present, he is active in COST CA20120 INTERACT.

KEYNOTES

COMPONENTS FOR BEYOND-5G PHYSICAL AND NETWORK LAYERS

Andreas F. Molish, Prof. University of Southern California, USA

Abstract

While network operators are in the middle of deployemnt of 5G, and the benefits and challenges are coming into focus, research has already started on what will ultimately become Beyond 5G (6G and above) wireless - not just in the cellular world, but also local area networks, personal area networks, and internet of things. This talk will give a broad overview of the topics that (in my view) have a good chance of impacting B5G, ranging from physical layer techniques, to networking. For the PHY, the talk will touch upon new modulation formats such as OTFS, multi-stream multiplexing including massive MIMO, cell-free distributed massive MIMO, and orbital angular momenta, to the specific challenges and opportunities of sub-Terahertz communications. For the networking side, a discussion about the convergence of communication, computation, and caching, which generalizes mobile edge computing will be discussed. A discussion of emerging applications that can make use of all these innovations will conclude the talk.

Bio



Andy Molish received his degrees (Dipl. Ing. 1990, PhD 1994, Habilitation 1999) from the Technical University Vienna, Austria. He spent the next 10 years in industry, at FTW, AT&T (Bell) Laboratories, and Mitsubishi Electric Research Labs (where he rose to Chief Wireless Standards Architect). From 1994 to 2008, he was strongly involved in COST (231, 259, 273), including as Chair of the Channel modelling group. In 2009 he joined the University of Southern California (USC) in Los Angeles, CA, as Professor, and founded the Wireless Devices and Systems (WiDeS) group. In 2017, he was appointed to the Solomon Golomb - Andrew and Erna Viterbi Chair. His research interests revolve around wireless propagation channels, wireless systems design, and their interaction. He has published 5 books, 300 journal papers, and 400 conference papers. He is also inventor of 70 patents, and co-author of some 70 standards contributions. His work has been cited more than 67,000 times, his h-index is 109, and he is a Clarivate Highly Cited Researcher. He is a Fellow of the National Academy of Inventors, Fellow of the AAAS, Fellow of the IEEE, Fellow of the IET, an IEEE Distinguished Lecturer, and a member of the Austrian Academy of Sciences. He has received numerous awards, among them the IET Achievement Medal, the Technical Achievement Awards of IEEE Vehicular Technology Society (Evans Avant-Garde Award), the IEEE Communications Society (Edwin Howard Armstrong Award), and the Technical Field Award of the IEEE for Communications, the Eric Sumner Award.

KEYNOTES

Propagation and Channel Modelling - Impact by 40 years of COST Actions

Thomas Kürner, Prof., TU Braunschweig, Germany

Abstract

Starting with COST 207 and its impact on standardizing GSM, the series of a total of 8 COST actions on Mobile and Wireless Communications have continuously accompanied and influenced the development of wireless systems until today. The speaker has particapated in al actions since 1991 focussing on propagation aspects. The lecture will consist of a review on channel modelling and propagation activities focussing and their impact and application from 2G to 5G wireless systems. Famous examples for the sustainable output of the early COST actions are the COST 207 channel model, the COST 231-Hata Model and the COST 231 Walfish-Ikegami Model which are still in widespread use. The COST 259 spatial channel model, COST 273 MIMO model and the COST 2100 channel model including its updates in COST IC1004 have paved the way for the success of multi-antenna systems. Among the more recent results is the COST IRACON Geometry-Based Stochastic Model for V2V Communications in Intersections. COST IRACON has also led foundations towards channel models taking into account Massive MIMO, millimeter wave and THz communications. A key ingredient of the success story of all these results is the exchange of information, models and measured data among participating institutes, which have catalysed the development of novel propagation and channel models in Europe. The lecture will also provide examples on the successful sharing of research data among the COST participants.

Bio



Thomas Kürner (Fellow IEEE) received his Dipl. Ing. degree in Electrical Engineering in 1990, and his Dr.-Ing. degree in 1993, both from University of Karlsruhe (Germany). From 1990 to 1994 he was with the Institut für Höchstfrequentztechnik und Elektronik (IHE) at the University of Karlsruhe working on wave propagation modelling, radio channel characterization and radio network planning. From 1994 to 2003, he was with the radio network planning department at the headquarters of the cellular operator E-Plus Mobilfunk GmbH & Co KG, Düsseldorf, where he was team manager radio network planning support responsible for radio network planning tools, algorithms, processes and parameters from 1999 to 2003. Since 2003 he is Full University Professor for Mobile Radio Systems at the Technische Universität Braunschweig. He was participating in many COST Actions on Wireless and Mobile Communications since 1991. In COST 259 he was chairing WG 3 Networks Aspects. In 2012 he was a guest lecturer at Dublin City University within the Telecommunications Graduate Initiative in Ireland. Currently he is chairing the IEEE 802.15 Standing Committee THz and the ETSI Industrial Specification Group THz. He was also the chair of IEEE 802.15.3d TG 100G, which developed the worldwide first wireless communications standard operating at 300 GHz. He was the project coordinator of the H2020-EU-Japan project Thor ("TeraHertz end-to-end wireless systems supporting ultra-high data rate applications") and is Coordinator of the German DFG-Research Unit FOR 2863 Meteracom ("Metrology for THz Communications"). In 2019 and 2022 he received the Neal-Shephard Award of the IEEE Vehicular Technology Society (VTS) and also in 2022 the Best Teacher Award of the European School on Antennas and Propagation (ESoA).



Slawomir J. Ambroziak
Gdańsk University of Technology, Poland

Joining this group was one of the best decision in my life, both private and professional. I have met here many world famous researchers, which gave me the opportunity to learn from and collaborate with the best. But I have also met here many friends, that remained friends for much longer that only single action period.

Kenan Turbic
Fraunhofer HHI, Germany

These actions provided an opportunity to receive valuable feedback for my research, to meet researchers whose work I admire, to visit different European cities and meet different cultures. Most importantly, through these actions I meet magnificent people whom I consider dear friends.

Alain Sibille
Telecom Paris, France

What comes to my mind when thinking of this series of actions is their incredible stability. I've participated from COST 273 to COST IC1004, i.e. for not far from 15 years overall, and I still see the ongoing organization of meetings, schools, workshops, papers, STSMs and so on.

So, good luck for the current and for the next Actions, hoping that the spirit and the momentum wil be maintained!

Paolo Grazioso
Fondazione Ugo Bordoni, Italy

13/12/2006... I was at the COST 2100 kickoff in Brussels... I heard an incoming SMS... it was from Lucio Ferreira and I still remember it even though that message is lost forever: "Nesta noite magica nasceu a nossa Aurora (his 1st daughter) This picture was took in Malaga in February 2013... I call this photo "Men in black" like the film... and when I see Michal... oh my God I still can't believe what happened to him some time later.

You are invited!

Join us in celebrating 40 Years of Actions in Mobile and Wireless Communications

Lisbon, Portugal
2024-Jan-22

MORE INFORMATION & REGISTRATION ON:
HTTP://INTERACTCA20120.ORG/ANNIVERSARY-CELEBRATION

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supported by COST (European Cooperation in Science and Technology).
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Our Actions help connect research initiatives across Europe and enable scientists to grow their ideas by sharing them with their peers.
This boosts their research, career and innovation.
www.cost.eu